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CONSUMERS' RESEARCH

Bulletin

INCOMPLETE FILE

March 1947

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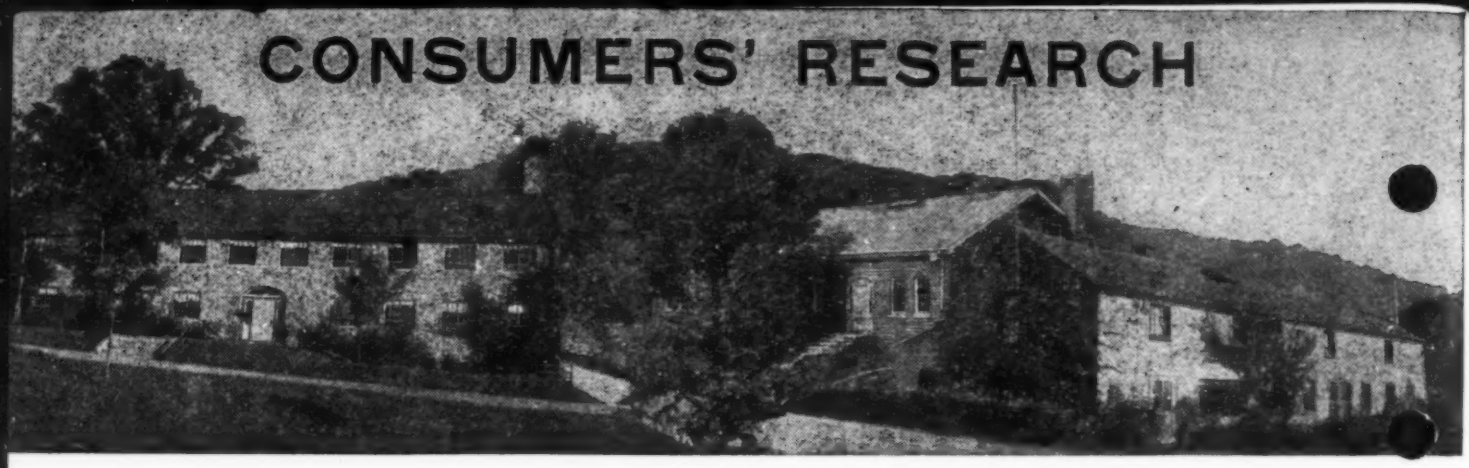

Vol. 19 • No. 3 **BULLETIN** March 1947

Off the Editor's Chest

SHORTLY before Christmas last year, a minor news item appeared in several New York newspapers reporting the resignation in a body of the members of the Consumer Advisory Committee of the OPA. The committee's closing press release urged that a permanent consumer advisory committee be formed to preclude "executive policy formed without adequate consideration of consumer interest." Thus, almost unnoticed, ended a government experiment which began back in NRA days when, in June 1933, a "Consumers' Advisory Board" was appointed by the late General Hugh Johnson to represent the consuming public at the hearings on fair competition codes that were authorized by the so-called National Recovery Act.

The first chairman of the Consumers' Advisory Board was a society woman whose chief qualifications appeared to be that she was a close friend of one of the members of the Cabinet and had done social work in New York City. The other members of the committee first appointed were a college president who had formerly been a professor of economics, and a college professor who was an economist and statistician and who resigned within two months after his appointment when he found the set-up was intended to be chiefly "window dressing." The other two original appointees were heads of women's clubs.

This consumers' group soon discovered that it would have to do battle with some of the most competently advised men in industry in attempting to have included in the codes for the canned foods, mayonnaise, jam and jelly, and various other industries any provisions that reflected the consumer's interests. The college professors, club women, and welfare workers constituting the Consumers' Advisory Board were speedily forced to face the fact that good intentions did not provide the technical training and know-how required to settle questions which were in essence scientific and technical. Some attempt was made to draw on the technical resources of the Bureau of Standards, the old Bureau of Home Economics, and various other agencies, but these resources proved to be inadequate; the necessary experts were just not available, or were not interested, and they were fully justified in not concerning themselves with the doings of this board, since it was set up to do a publicity and propaganda job, rather than for effective functioning.

The Consumers' Advisory Board's avowed aim, as it was finally formulated, was to seek the adoption of quality standards for each commodity, to be made a part of the "code." The development of quality standards is an important field of scientific and technical study. It is also a subject which calls for a great deal of special training and experience, and it cannot be effectively dealt with by theoreticians or social scientists. Standards are sometimes very useful to bankers or factors because they provide a basis for advancing money on particular lots of commodities in storage by indicating the grades or qualities of those products. To manufacturers, their uses are numerous and important. They are often indispensable in the

(Continued on page 26)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, Helen P. Alleman, A. R. Greenleaf, and Charles L. Bernier. Editorial Assistants: Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; 46, 47—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least a month before it is to take effect, accompanying your notice with statement of your old address with name in full. At least three weeks' notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

¶CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★★★For a brief cumulative index of 1947 BULLETINS preceding this issue, see page 34.

CONSUMERS' RESEARCH BULLETIN, issued monthly by Consumers' Research, Inc. Publication Office, Box 429, Easton, Pa. Address orders and correspondence to Consumers' Research, Washington, N.J. Single copy 30c. Subscription price (12 issues) $3 per year, U.S.A.; Canada and foreign, $3.50. For libraries, schools, and colleges, a special subscription of nine monthly BULLETINS (October-June, inclusive) is available at $2; Canada and foreign, $2.50. ¶Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization. Entered as second-class matter November 9, 1934, at the Post Office at Washington, N.J., under the Act of March 3, 1879; additional entry at Easton, Pa. Copyright, 1947, by Consumers' Research, Inc., Washington, N.J. ●● Printed in U.S.A. ●● CONSUMERS' RESEARCH BULLETIN is on file in many school, college, and public libraries and is indexed in Industrial Arts Index and in the Readers' Guide to Periodical Literature.

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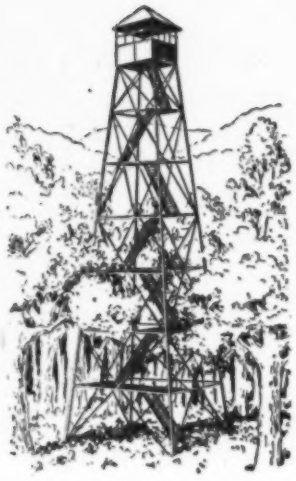


The Consumers' Observation Post

THE 1947 AUTOMOBILES will be essentially the same as those put out in 1946 except for radiator grilles and other minor changes, advises a leading automobile trade journal.

* * *

COFFEE CONNOISSEURS have always turned up their noses at left-over coffee. They will be glad to know that there is a real health basis for their preference for a freshly made cup of coffee. Warmed-up coffee, according to Dr. Oscar A. Straus of Chicago, is one of the causes of diseases of the arteries. It appears that when coffee is allowed to stand for any length of time, it not only loses flavor, but the oil separates and is not reunited with the liquid on reheating. The oily substance in the reheated coffee acts as an irritant to the inner walls of the blood vessels of its uncritical drinker.

* * *

TWO-PANTS SUITS, the economical buy for the man on a limited clothing budget, are expected to be available by Easter. When the government ban on their manufacture was lifted last October, clothing men were inclined to stick to their wartime practice of making suits with only one pair of trousers. It is reported, however, that they were obliged to yield to public demand for the extra trousers. There is expected to be an extra charge for the second pair.

* * *

EGGS GRADED according to U. S. Government Standards do not appear to be particularly popular in Texas. Two displays of eggs, one graded and labeled "Grade A Eggs," the other ungraded and labeled "Fresh Infertile Eggs," were set up in a number of stores by the Texas Agricultural Experiment Station. Records of sales kept for two weeks showed that consumers bought eggs labeled "Fresh Infertile" by a ratio of two to one in preference to those labeled "Grade A." Although the selling price for the two lots of eggs was the same, the ungraded eggs averaged smaller in size than the "Grade A" eggs, and in many cases the ungraded eggs were dirty, cracked, and poorly shaped. The Experiment Station workers concluded that consumers needed more education on egg quality and grades.

* * *

VITAMINS IN EXCESS QUANTITIES can be harmful, as CR has pointed out from time to time. Reinforcement was given this position recently by Brig. Gen. Wallace H. Graham, President Truman's personal physician, who pointed out that itching and burning of the skin may follow excessive doses of niacin (part of the vitamin B complex), and that vitamin D taken in extremely large amounts in the treatment of arthritis may produce calcification of tissues. He deplored the tendency of people to take vitamins indiscriminately, and without medical advice.

* * *

MANUFACTURERS of BC Headache Powders and Stanback Headache Powders have eliminated the ingredients acetanilid and potassium bromide from their formulas. The Federal Trade Commission had instituted proceedings against both companies on the ground that the advertising for these products failed to reveal harmful effects, including skin eruptions, mental derangement and collapse, that might result from continued use of the products in a quantity exceeding the recommended dosage or with greater frequency than that recommended. As the result of the companies' action, the F.T.C. has discontinued further action. The new formulas and labels have been approved by the Food and Drug Administration.

THE AVERAGE CAR OWNER pays $133.74 in special taxes to operate a new automobile the first year, reports Automobile Facts. Federal excise taxes on the car, tires, and tubes account for more than 60 percent of the total. Taxes on gasoline, which are estimated at something like $40 a year, are a lucrative source of state revenues. There are already, according to Business Week, proposals to raise present state taxes in California, Colorado, Connecticut, Indiana, Michigan, Montana, Nebraska, North Dakota, Pennsylvania, South Dakota, Utah, Texas, and West Virginia.

* * *

LACK OF MEAT is one of the chief causes for the low resistance of modern Eskimo children to tuberculosis, concludes Hospital Topics. The diet of the Eskimo children consists chiefly of bread, fried dough, and candy with the result that their teeth are often inferior to those of their parents who were brought up on fish-eye chowder, seaweed, and berries covered with seal oil. Some fear is expressed that the Alaskan natives will be wiped out by disease unless vigorous corrective measures are taken.

* * *

EXCELLENT WORK on the repair of Compound and Compur shutters has been done by A. C. Muller, 421 Seventh Ave., New York 1, reports one of CR's consultants skilled in photographic matters and quite familiar with work on camera repairing. Since such repairs are among the most exacting involved in work on cameras, it is believed safe to assume that Mr. Muller might be quite competent on other camera repair work. (The making and repairing of bellows is not one of the jobs which he takes on, however, as this is quite a specialized trade.)

* * *

EXTRA AMOUNTS OF VITAMINS won't increase your ability to withstand exposure to cold weather, according to experiments made on twelve healthy young men by Nathaniel Glickman and associates. Those who participated in the project were put on a diet that was considered to be adequate in all essential nutrients except ascorbic acid, thiamine, riboflavin, and niacin which were about two-thirds or lesser fraction of the recommended allowances of the National Research Council. Supplementary amounts of these vitamins were then given in capsule form. The conclusions drawn from the results of the test were not only that excessive amounts of these particular vitamins over the amounts required for adequate nutrition were not effective in increasing the ability to withstand exposure to cold, but that the actual requirements of some of these vitamins might be considerably less than the recommended allowances set by the National Research Council.

* * *

THE TIRE SITUATION continues to be difficult. More tires are being produced than during the war, yet car owners find the shortage severe. It is said that new car production and stock piling by car makers is partly responsible, but even this, plus an allegedly heavier demand, does not add up. Approximately 80 million tires were produced in 1946, yet new car production has accounted for less than 10 million tires, and even large stock piling, if it were going on, would not take a number of tires even approximating the number produced. The possibilities are that many tires are going into export and into military uses, possibly to foreign governments. Railroad men speak of being "sick and tired" of transporting cars to docksides for export and elsewhere, when there is such an extreme shortage in this country. Revealing mistakes have occurred occasionally, as in one case when Ford cars came to a Midwestern dealer equipped with speedometers reading in kilometers; others with gasoline gauges reading in imperial gallons.

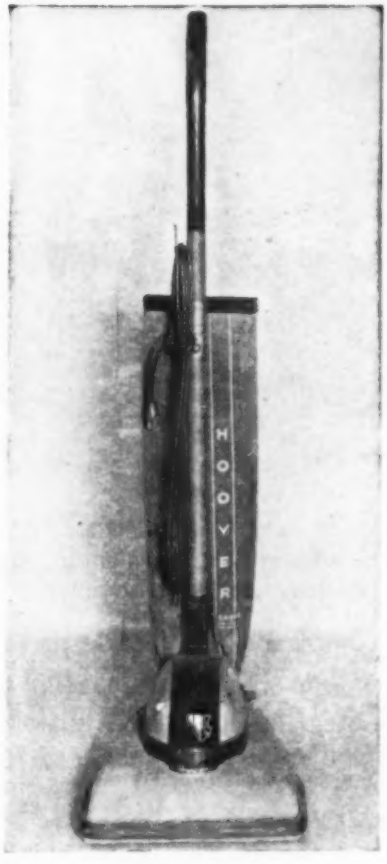
* * *

DIFFICULTIES WITH PRODUCTION of new cars reflecting carelessness on the part of workers and inspectors still continue. Failure to clean sand out of water jackets has resulted in clogging of radiators so that new cars have developed the same chronic and troublesome overheating troubles which beset the old jalopy that had been turned in. Very little can be done about this sort of workmanship and inspection, as at the present state of our "reconversion" period, factory workmen often do not do their jobs in accordance with the standards of care and workmanship of normal times, and just can't be made to do so. The government's failure to put as much emphasis on production and its quality as they have upon the need for fully-maintained take-home pay dur-

(The continuation of this section is on page 37)

A Report on Eleven Vacuum Cleaners

VACUUM CLEANERS manufactured for general household use are basically of two different types. The older or *revolving-brush type* consists of a motor-driven fan or impeller which sucks air through the texture of the rug or carpet being cleaned and then into a nozzle, then pushes this air, charged with the dirt from the rug, into a bag. This bag is usually made of cloth which is permeable to air but blocks the passage of dust; more recently, a permeable fibrous material has been used in some makes of vacuum cleaners as a liner for the cloth bag and is discarded when soiled. The revolving-brush type cleaner has a brush in its suction nose or nozzle which is rotated by a belt driven by the same motor which drives the fan. To the brushing action, the *Hoover* adds a beater action, produced by a metallic spiral ridge alternating with a row of brush bristles on the revolving brush-mandrel.

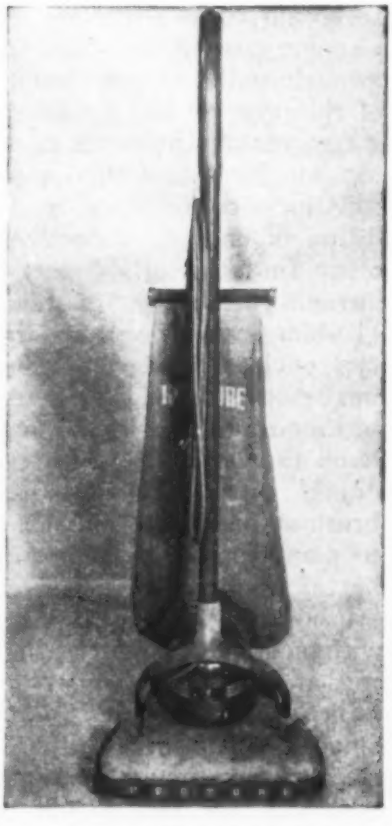


Hoover, Model 27

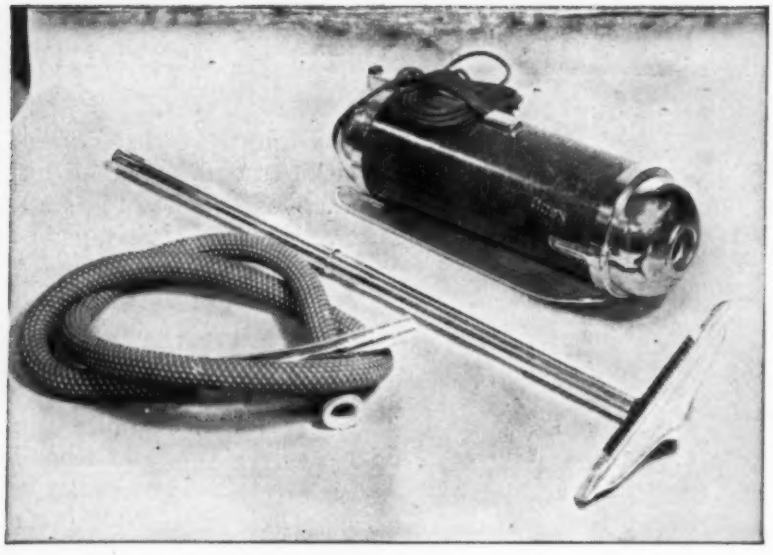
A more recently developed style of cleaner known as the *tank type* has a motor-driven fan and a cloth or paper filter, usually of the bag type, mounted in an enclosed shell or tank. The tank is usually moved along the floor on runners or wheels. A hose and nozzle, attached, are used to pick up the dirt. The fan sucks air which carries the dirt from the rug through the nozzle and hose and then to the filter bag inside the tank. The dirt is removed by the filter and the air which carried it passes on through the fan and is then discharged into the room.

Each type of cleaner has its own particular advantages and disadvantages, though those who prefer one kind are prone to believe that the other is of little value. The Eureka Vacuum Cleaner Co., for instance, advertises the combination of two *Eureka* machines reported on in this article as a "cleaning system." One is the revolving-brush type, for cleaning rugs and floors; the other, the tank type, is for cleaning upholstery, curtains, and the like. This seems just another attempt to sell the consumer more than

Eureka, Model D 272



Kenmore, Model 116.9815-1



Apex, Model 5-140

his needs call for and at the same time helps increase the company's sales volume. CR believes that one *good* cleaner of either type will easily take care of the normal home cleaning problem.

The revolving-brush type has to be moved as a whole when cleaning rugs, floors, etc. Inasmuch as the average weight of this type of cleaner tested was more than 15 pounds, pushing one for a half-hour or so calls for a considerable expenditure of energy; housewives often find the effort rather burdensome. The revolving brushing action afforded by this type of cleaner is advantageous in that it favors slightly better picking up of lint, thread, and hairs than is gotten with the "tank" type. The revolving-brush action is also important to many in that it imparts a better over-all smoothed or brushed appearance to rugs with medium or high pile; such rugs are often left with an "unkempt" appearance when cleaned with the tank-type cleaner. It should be noted here that the belt should be disconnected from the brush when a revolving-brush type cleaner is used for cleaning upholstery and like articles. If this is not done, there is likely to be undue wear on that part of the rug upon which the cleaner body proper happens to be standing at the time when only the nozzle and hose are being used and the body is stationary.

Kirby, Model 505

The tank type of cleaner, in general, is more quiet in operation, and certainly much easier to use when cleaning under chairs, tables, and other articles of furniture. In general, it is also easier to empty the dirt from this type, and there is less tendency to diffuse dust in the air while the operation is being performed. A distinct advantage of this type of cleaner is the ability of the machine to clean rugs, bare floors, woodwork, upholstery, curtains, and the like by a simple change from one type of nozzle to an-

Electrikbroom, Model 1

other suited to the different surface. A disadvantage of this type is the availability of the switch to small children while it is in use. Once "Junior" finds out how to turn the machine on and off he may delight in doing just that while mother is cleaning, and the habit can be a disturbing one.

There was a long delay before CR was able to buy all the eleven different models of vacuum cleaners which are reported in the present study, but with these models in hand, it was evident that there were no radical changes in design. Six of the cleaners were of the conventional combination suction and revolving-brush type; four were of the tank type (the *Filter Queen* is classed as a tank type in this article; see photo); and one was a combination of the two types, as typified by the *Electrikbroom*, which many will have seen advertised as an "amazingly different" innovation in cleaners.

Filter Queen, Model 200

Tests Performed

The following tests were conducted by CR to determine the relative qualities of the various cleaners.

Electrical leakage tests: there were three of these tests, in which the electrical leakage between the ungrounded frame and the supply terminals of each cleaner was measured in (1) the "as received" condition, (2) after the cleaner had been exposed for 24 hours to a relative humidity of 85% and a room temperature of 85°F ± 5°, and (3) at the maximum operating temperature (after the cleaner had been run for one hour at maximum energy input).

A radio interference test to determine the amount of interference caused by each cleaner, in which a sensitive radio-broadcast receiver was connected to the line which supplied the vacuum cleaner. The power level in the loud-speaker circuit of the receiver was measured with a power-output meter over the entire broadcast band tuned by the receiver while the cleaner was operating. The corresponding radio frequency voltages required to produce the same sound level in the loud-speaker circuit of the receiver were then measured using a standard signal generator as a source.

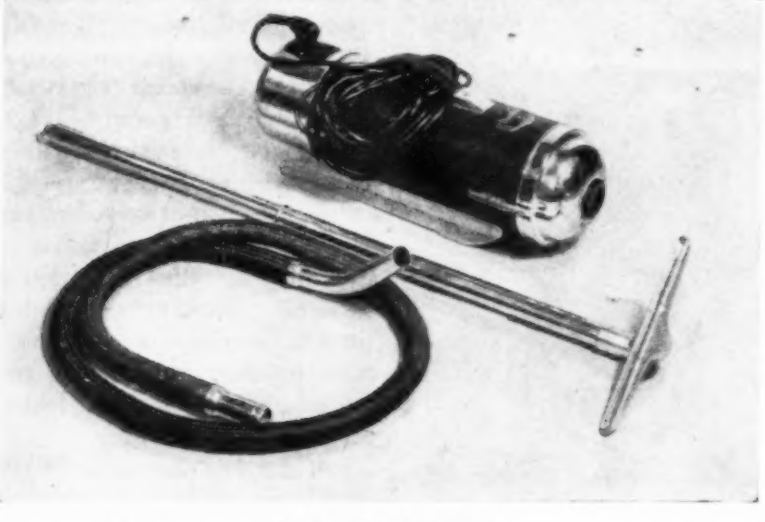
A test to determine the dirt-removing ability of each cleaner: in this test each cleaner was

Eureka, Model W-75

Royal, Model 189

used to clean previously dirtied sections of carpeting (low, medium, and high pile). The amount of dirt picked up by the cleaner during certain time intervals was measured and reported as a percentage of the total dirt in the rug. Two series of tests were made, one beginning with the bag or filter clean and the other beginning with the bag or filter dirty, that is, containing the amount of dirt picked up from one previous test. Each series was repeated and the four test runs (2 bags clean, 2 bags dirty) were averaged for each interval of time. The dirt mixture itself consisted of two grades of fine silica (sand) mixed with talcum powder. A very small amount of petroleum jelly had been added to this mixture. This synthetic dirt was thoroughly imbedded in the rug by mechanical means for a period of 20 minutes. Each sample for each separate test was prepared in the same manner and with similar amounts of dirt. At the beginning of each test run the height of the cleaner nozzle was adjusted in accordance with the scale markings on the cleaner or with the manufacturer's printed instructions.

Power input measurements were made subsequent to the dirt-removing tests and under free-air conditions. Readings of line voltage, line current, and power input were taken.



Vactric, Model W-100

Results of Tests

The electrical leakage currents in the "as received" condition were less than 0.20 milliampere for all of the cleaners except the *Filter Queen* (0.30 ma.). CR feels that a leakage current greater than 0.20 to 0.40 ma. may be considered excessive for this type of appliance.

Hamilton Beach, Model 14V

After exposure to a high humidity (85%) and a temperature of about 85°F for 24 hours, the following cleaners showed excessive leakage current: *Hamilton Beach* (0.65 ma.—somewhat excessive); *Regina Electrikbroom* (1.50 ma.). The cleaners were then operated at maximum input for a one-hour period, after which the leakage currents were again measured. In this case the

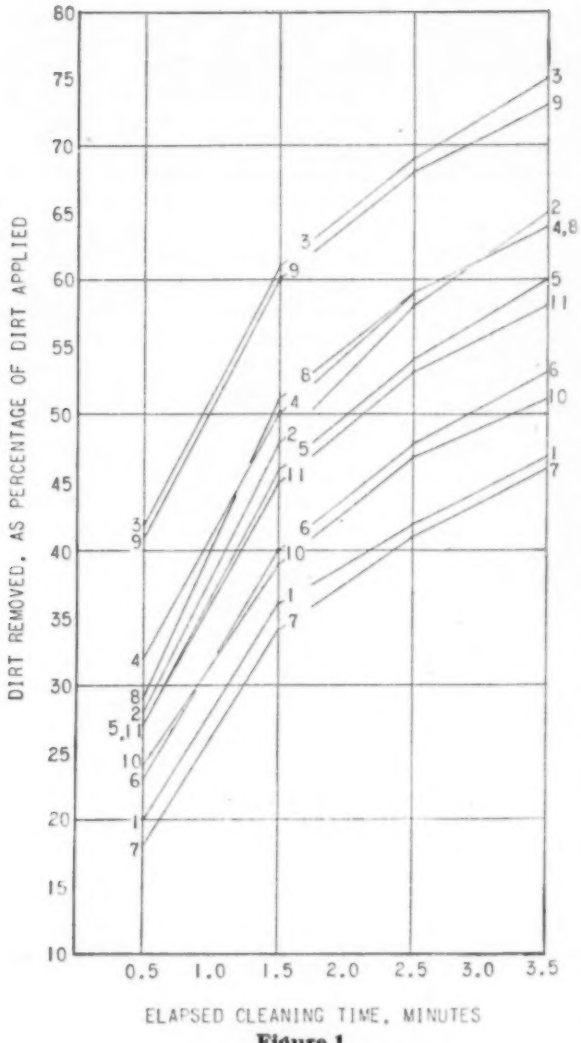


Figure 1

1. *Hamilton Beach*, Model 14V
2. *Kirby*, Model 505
3. *Eureka*, Model D 272
4. *Apex*, Model 5-140
5. *Electrikbroom*, Model 1
6. *Eureka*, Model W-75
7. *Royal*, Model 189
8. *Kenmore*, Model 116.9815-1
9. *Hoover*, Model 27
10. *Filter Queen*, Model 200
11. *Vactric*, Model W-100

Hamilton Beach showed the largest current leakage but it was not deemed excessive. All of the machines withstood the 1000-volt proof voltage, which was applied for one minute between the electrical circuit of the cleaner and its frame while the cleaner was at its maximum operating temperature.

In the test to determine the amount of radio interference caused by the various cleaners, it was found that all but three caused excessive radio noise. The exceptions were the *Hamilton Beach* (very slight), the *Eureka*, Model D 272 (slight), and the *Apex* (slightly greater than the *Eureka*, Model D 272).

Some very interesting results were noted from the tests performed to determine dirt-removing ability. It was found, for instance, that the cleaners on an average picked up about 28% of the total dirt in the rug in ½ minute; about 46% in 1½ minutes; about 54% in 2½ minutes; and 60% in 3½ minutes (see Fig. 1). (Comparatively speaking, spending 2½ minutes on the test size rug is equivalent to cleaning a 9 x 12 rug for 20 minutes.) Thus for 40% additional time spent in cleaning, only 6% additional dirt is removed from the rug, a nice example of the "law of diminishing returns."

Averaging the results of all 12 tests made with each cleaner, it was found that the *Eureka*, Model D 272, and the *Hoover*, Model 27, showed the highest percentages of dirt removed. The following cleaners ranked relatively high in their dirt-removing ability: the *Apex*, Model 5-140 (tank type), the *Kenmore Imperial Automatic*, the *Kirby*, Model 505. It is interesting to note that the power input to the *Eureka*, Model D 272, which showed the highest percentage of dirt removed, was 285 watts, and the power input to the *Filter Queen*, Model 200, which was only fair in dirt-removing ability, was 530 watts or nearly twice as great. This may indicate that good design is likely to be in evidence throughout a well-engineered, efficient cleaner.

The ratings that follow are mainly based on the ability of the cleaner to *CLEAN* a rug or carpet. Power input as actually measured is shown in parentheses along with manufacturer's rated power input, thus 285 (260). The weights shown include the weight of cord and bag or hose and nozzle only. The type of cleaner (whether revolving-brush or tank) was not used as a basis for judging merit. It is felt that the judgment of this feature and its desirability in the particular home can be left to the individual consumer, after she has reached her conclusions on the main points considered in the ratings. The prices shown were valid some months ago and there may have been increases in the prices of some of the makes subsequently. However, in a relative sense the price figures should be about correct and so useful for the consumer at the present time.

A. Recommended

Hoover, Model 27 (The Hoover Co., North Canton, Ohio) $57.50 (accessories $16.50 extra). Combination revolving-brush and beater type. Weight, 16.5 lb. Power input in watts, 300 (280). 100 to 115 volts, d-c to 45 cycles a-c; 105 to 120 volts, 46 to 60 cycles, a-c. This

cleaner was substantially the equal of the *Eureka*, Model D 272, in dirt-removing ability. It showed slightly excessive leakage current under humid conditions (0.50 ma.). Excessive radio interference. **2**

Eureka, Model D 272 (Eureka Vacuum Cleaner Co., Detroit) $76. Revolving-brush type. Weight, 16 lb. Power input in watts, 350 (285). 115 volts ac-dc. This cleaner, in addition to having the greatest dirt-removing ability, also had very good electrical characteristics. Gave slight radio interference. **3**

B. Intermediate

Apex, Model 5-140 (The Apex Electrical Mfg. Co., Cleveland) $59.95. Tank type. Weight, 18 lb. Power input in watts not indicated (525). 115 volts d-c; or a-c, 25 to 60 cycles. This cleaner was rated second, along with the *Kenmore* and *Kirby*, in dirt-removing ability (but considerably below *Eureka* and *Hoover*). It had excellent electrical characteristics. The amount of radio interference produced was slightly greater than that produced by the *Eureka D 272*. **2**

Kenmore Imperial Automatic, Model 116.9815-1 (Sears, Roebuck & Co.) $57.75. Revolving-brush type. Weight, 16 lb. Power input in watts not indicated (330). 110 to 120 volts ac-dc, 3 amperes. This cleaner was rated second, along with the *Apex* and *Kirby*, in dirt-removal ability. It had excellent electrical characteristics. Excessive radio interference. **2**

Kirby, Model 505 (The Scott & Fetzer Co., Cleveland) $89.50. Revolving-brush type. Weight, 17 lb. Power input in watts not indicated (320). 110 volts ac-dc, 3 amperes. This cleaner was rated second, along with *Apex* and *Kenmore*, in dirt-removing ability. Its leakage current did not exceed the permissible value. Excessive radio interference. **3**

C. Not Recommended

Electrikbroom, Model 1 (The Regina Corp., Rahway, N.J.) $39.50. Combination type. Weight, 6.5 lb. Power input in watts, 300 (265). 115 volts ac-dc. Only moderately good in dirt-removing ability. It showed excessive leakage current (1.50 ma.) under humid conditions. Excessive radio interference. **1**

Hamilton Beach, Model 14V (Hamilton Beach Co., Racine, Wis.) $39.75. Revolving-brush type. Weight, 14 lb. Power input in watts, 290 (260). 115 volts d-c, or a-c up to 75 cycles. One of two lowest in group in dirt-removing ability. This cleaner showed somewhat excessive leakage current under humid conditions (0.65 ma.) and at operating temperature (0.45 ma.). Least radio interference of all cleaners tested. **1**

Eureka, Model W-75 (Eureka Vacuum Cleaner Co., Detroit) $66.50. Tank type. Weight, 17 lb. Power input in watts, 450 (455). 110 to 120 volts ac-dc, 25 to 60 cycles. Only fair in dirt-removing ability. It had excellent electrical characteristics. Excessive radio interference. **2**

Royal, Model 189 (P. A. Geier Co., Cleveland) $54.50. Revolving-brush type. Weight, 13½ lb. Power input in watts not indicated (325). 110 volts ac-dc, 2.8 amperes. One of two lowest in group in dirt-removing ability. Slightly excessive leakage current under humid conditions (0.50 ma.). Excessive radio interference. **2**

Filter Queen, Model 200 (Health-Mor Sanitation System, Inc., Chicago) $84.50. Modified tank type (see photo). Weight, 23 lb. Power input in watts, 500 (530). 110 volts, ac-dc. Only fair in dirt-removing ability. Leakage current of this cleaner in the "as received" condition was appreciable, but did not exceed the permissible value. Excessive radio interference. **3**

Vactric, Model W-100 (Vactric Ltd., Scotland) $73.12. Tank type. Weight, 14 lb. Power input in watts, 225 (250). 110 to 120 volts, designed for alternating current at 50 cycles. (Performance was found satisfactory at 60 cycles.) Only moderately good in dirt-removing ability. It had excellent electrical characteristics. Excessive radio interference. **3**

★ ★ ★ *When Subscribers Write to CR—* ★ ★ ★

CR receives many letters from subscribers requesting information about items which have been tested or are being tested. Many people write on post cards, not realizing that the post card affords no means by which they can supply postage for our reply (unless a return post card is furnished—and then, of course, only a very brief answer can be given). We suggest that all who wish answers to inquiries write a *letter*, enclosing a stamped envelope, ready-addressed, for our reply. Then, if we have a BULLETIN tear sheet or something of the kind that will help to furnish the answer, we can enclose it. When practicable, use the longer, No. 10 or No. 11 envelopes, which are about 10 and 10½ inches in length, respectively, to facilitate our sending such an enclosure with our reply.

It is best in writing CR, to put questions about appliances, etc., in an entirely separate letter from anything having to do with your subscription or its status, as such matters are necessarily handled in different departments, and reply to one may unavoidably be delayed considerably while action is being taken on the other.

Steam Automobiles—

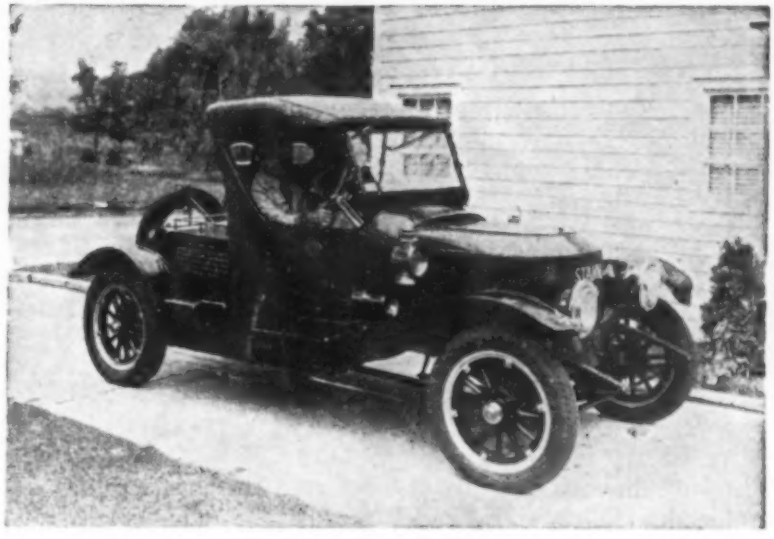
Will They Stage a "Come-Back"?

STEAM CARS were in use when gasoline cars became popular, but were never popularly accepted—nor came close to developing wide markets as we consider sales and car use today.

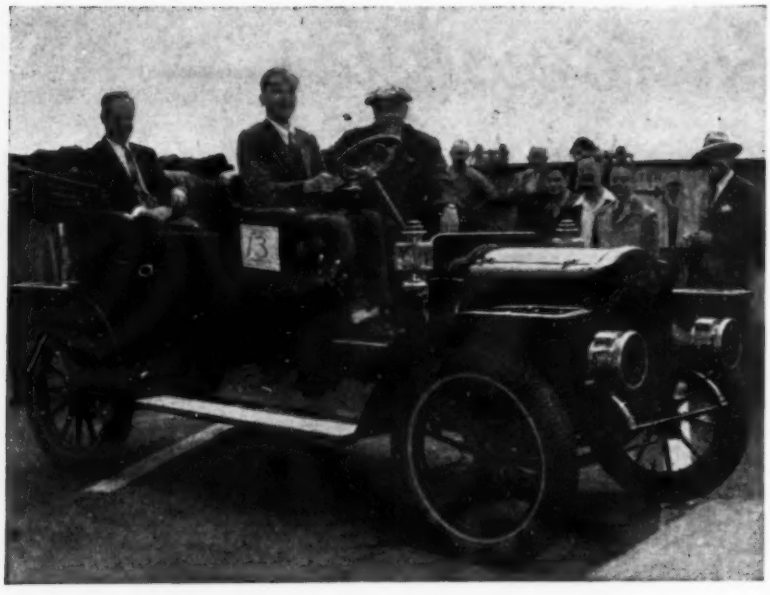
In the late 1890's and early 1900's when automobiles first came on the market, gasoline and steam cars were about on a par as to practicability; that is, both types had numerous advantages and disadvantages. Neither was any too reliable, and each required frequent adjustments or repairs. With steam cars, the amount of water which could be carried for the boiler was limited; this required a stop every few miles (40 to 200) to replenish the water supply. The fuel used in both types was cheap (gasoline or kerosene or a mixture of both, in the steam cars), but economy was not important, for only the wealthy could afford to own any automobile in those days. Reliability was not an essential, for if an automobile, powered by either gasoline or steam, ran for a few miles without needing some attention or adjusting, it was considered good enough. The prestige of ownership was the drawing card, even though the old saying "Get a horse" piqued many owners of both types of cars.

Certain of these advantages and disadvantages later proved to be important. Although steam cars could easily outperform gasoline cars, steam motive power was "old" (steam vehicles were used in England in the late 1700's and early 1800's), while the gasoline car was "new"; gasoline-driven automobiles were simpler in design, and could be started up quickly even though the engine had to be cranked by hand. The organization of automobile manufacturing companies centered around the new gasoline cars. Propaganda against steam cars was directed at the dangers from explosion, the mechanical knowledge and care required to operate and maintain them, and the time taken to get up steam after the boiler had cooled down overnight or longer. Laws were passed prohibiting steam cars from entering garages. (So-called "open-flame laws" in some states.)

The finest engineering brains (of men well known today, such as Kettering) were concentrated upon making the new gasoline cars fast and reliable. Millions of dollars were poured into design, development, and sales. Steam car manufacturers, confident of the superiority of their vehicles, stood idly by, making few improvements in design (firing up time remained about the same until many years later), and doing nothing to lower production costs (a major factor in the success of the gasoline car—witness the quick sale of millions of Ford's *Model T*, introduced in 1908). By 1910 the gasoline car was becoming the popular vehicle, could be bought by many, not just the well-to-do, while the steam car still remained expensive. Two years more (1912) and only a few makers of steam cars remained. Nearly all had either discontinued making "steamers" and had turned to making gasoline cars, or had gone out of business.



1914 *Stanley Steamer* Roadster, still being driven by Earle S. Eckel of Washington, N.J.



1909 *White Steamer*

Thus we have a picture of complacency followed by corporate death, in the face of obvious selling pressure coupled with fine engineering development. One company (Stanley) struggled along until the middle 1920's. There were a few new attempts to introduce steam cars (Doble around 1926). Several steam buses were designed and put into service. Few differed much from the earlier types. Doble was probably the most advanced as to generator (boiler) design and steam-powered buses as to engine design, but in general the basic design remained without change and without any sustained efforts to reduce costs of production. Owners who remained either were old time "steam men" (railroad engineers, etc.) or were collectors and enthusiasts. What little engineering was put into steam cars in their later years—while possibly significant—was not recognized and most of the same disadvantages remained. The steam car never really did arrive.

From this background some tentative conclusions as to the future of steam-powered vehicles can be drawn. First of all an entirely different approach to the design problem must be made. It is not a matter of designing "just another" steam engine and coupling it to a boiler. Full use must be made of the latest engineering developments in materials, especially aimed toward reducing weight and cost. While steam cars were never really dangerous, the design must be such that even with little or no attention, perhaps with considerable mistreatment, no danger could exist greater than with a gasoline automobile. It must be possible to start from a cold condition as quickly, or almost as quickly, as with a gasoline car. (The car owner might be willing to wait 15 to 30 seconds or so, but not more than a very few minutes.) Controls necessary for proper functioning of the steam system must be simple and foolproof. While some special knowledge on the part of the owner would be necessary and probably reasonable, nothing as elaborate as required by "the engineer's dreams" (which some steam cars were called) can be tolerated. Long trips of 500 to 1000 miles, without need to stop for water, must be possible.

These and other factors, which need not be discussed here, all add up to putting new thinking into the engineering of steam vehicles, if they are ever to come back into use. Their thermodynamics must be again studied and developed, and perhaps a new fluid, other than water, must be used. The water either must be prevented from freezing by adding alcohol (which was done in early cars), or another fluid used which does not freeze. Generator and engine designs must not only make full use of new materials, but of the latest of thinking in terms of modern "automotive engineering design." (Engines in all steam cars, with exception of two or three, were the same as in 1903, and the same type as used for marine and stationary purposes, i.e., double-acting two-cylinder.) Advantage must be taken of higher engine speeds to obtain more power with less weight. High pressures and temperatures, both as high as the new materials permit, must be considered.

When these things are done, and only then, can we believe that there is any likelihood of the steam car's staging a comeback. It will require time and money—years of development and many thousands of dollars. Possibly some company may choose to make the effort. The basic advantages of the steam system make it inherently more suitable for vehicles than the "gas" engine if the steam engine is of the reciprocating type

(high torque at starting and at low speed), and it would be suitable for airplanes if used with a turbine. The reciprocating engine, when operating on steam or other vapor, requires no starting motor, no clutch, and no transmission. Modern engine design can readily reduce weight of reciprocating parts and increase engine speed, with less vibration than in older types of steam engines.

The over-all economy of late model (1925 to 1928) steam cars compared favorably with gasoline cars of similar weight. In the hands of owners familiar with their operation, the maintenance costs were lower than for gasoline cars. Cost of lubricating oil was small. However, due to the greater weight of these steam vehicles, fuel consumption was in the range of 12 to 15 miles per gallon approximately, which was higher than for popular-priced gasoline cars. Reduction in weight through new design should readily improve fuel economy of steam cars.

If steam cars are ever again made and sold, they will assuredly not be just the revival of old time steam car designs, but will be completely new vehicles—new throughout in so far as the power plant is concerned. Steam power, with high torque at low speeds, and elimination of clutch and transmission gears, surely does possess inherent advantages, not only for cars, but especially perhaps for trucks and buses.

A Westinghouse Table-Model Radio and a Westinghouse Radio-Phonograph Combination

MANY radio manufacturers are still experiencing great difficulty in maintaining production on their various models because parts shortages make it necessary to use many inferior substitutes, or even require them to discontinue manufacture of certain models a short time after production has been started. For this reason, CR is reporting on any new models purchased as quickly as possible after tests are completed, so that the information presented will be most useful to the consumer.

A. Recommended

Westinghouse "Super 7," Model H 104 (Westinghouse Electric Corp., Home Radio Division, Sunbury, Pa.) $79.35. 105 to 120 volts, a-c. Large-size table model, 13½ in. high, 19 in. wide, and 11 in. deep. Mahogany veneer wooden cabinet with highly polished finish. 7-tube superheterodyne circuit. Includes fixed (non-tuned) r.f. stage (desirable) with good gain. Tuning range 530 to 1600 kilocycles on broadcast and 4.8 to 18 megacycles on short wave. Both manual and push-button tuning. Automatic volume-control circuit very effective. Provision made for record player (not included) on rear of chassis. The parts and workmanship were considered excellent, in comparison with many other table models now being manufactured. Sensitivity and selectivity good on broadcast band; selectivity only fair on short wave. Gave excellent reproduction at various output levels. Approximate audio range 60 to 4500 cycles (lower limit good, upper limit considered only fair for a set at this price[1]). Maximum power output at 400 cycles with 10% distortion—18 watts (only 1 watt at 100 cycles—low—at 10% distortion). High audio output at mid-range due to use of a pair of "Beam Power Amplifiers" (6Y6) in push-pull in the output circuit, and an 8-in. dynamic speaker. Practically no residual noise with the receiver turned on and the volume control set at zero. Electrical safety judged adequate—no shock hazard found. Had Underwriters' Laboratories' label attached. This receiver was one of the best table models we have tested during the past year and, if priced somewhat lower, would be an excellent buy for those persons not satisfied with the listening qualities of the usual small table models now being sold.

Westinghouse "Super 7 Automatic," Model H 107 (Westinghouse Electric Corp., Home Radio Division) $172.75, Zone 1; $181.40, Zone 2. 105 to 120 volts, a-c. Full-size console model with record player and automatic record changer. The over-all size was 39 in. high, 28 in. wide, and 15½ in. deep. This console is sold with either a mahogany or walnut veneer finish and is well constructed. The radio receiver in this model was the same as the *Westinghouse*, Model H 104, and the results of the performance tests for that model (as reported above) apply in full here. The record player had a capacity for 12 ten-inch or 10 twelve-inch records. It was mounted in a pull-out drawer and was easily loaded and returned to its position within the console. Conventional pickup having low needle pressure—1 oz. (desirable because it reduces wear on records and for other reasons). Carried Underwriters' Laboratories' label.

[1]It should be noted that manufacturers pretty generally believe that consumers prefer upper frequencies to be cut off at around 4000 to 5000 cycles, and for most broadcasting, probably, and for many records, more pleasing reproduction will usually be obtained by that expedient—owing to deficiencies inherent in broadcasting practice and to interstation interference, static, etc., and in record-making. The right way, however, to handle the problem, is for the set manufacturer to provide wide-band reception and include in the set means by which the "top" can be cut off by turning a knob, when necessary or desirable, *at the user's option.*

Washing Machines—

A Report on Eight Additional Machines

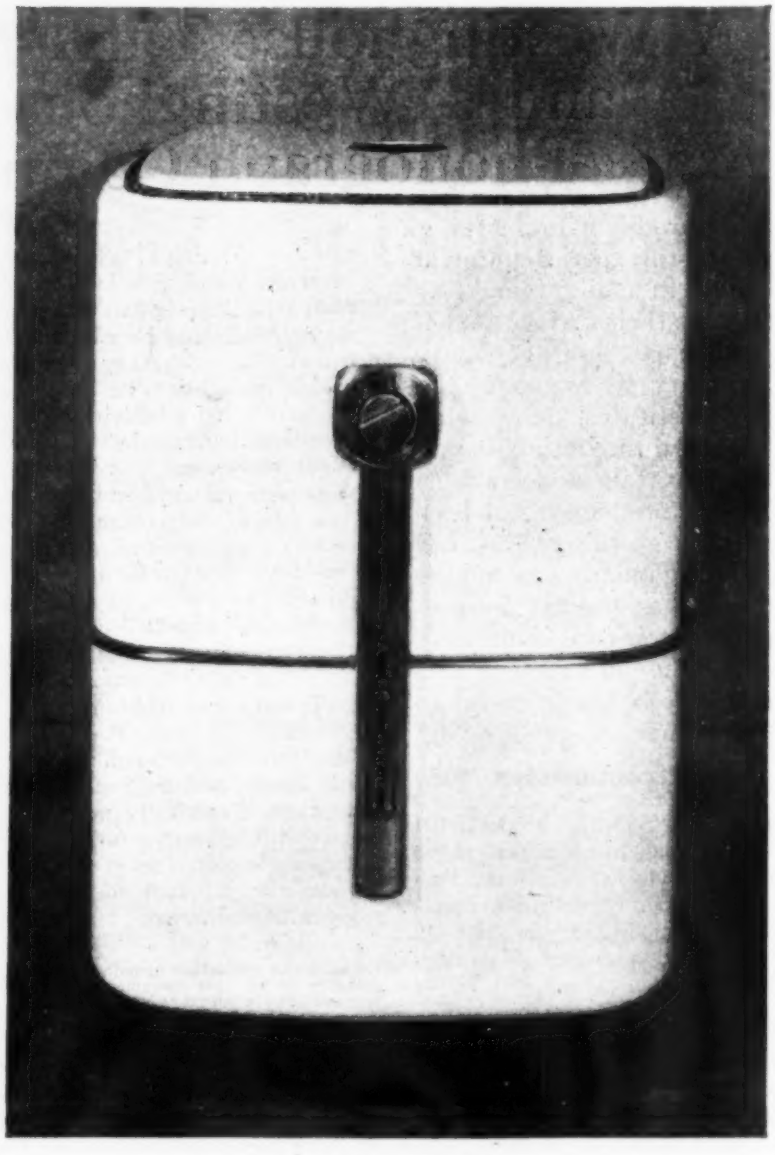
Editor's Note:

The following report covers four washing machines of post-war production of the power-wringer type, *ABC*, *Apex*, *Universal*, and *Voss;* three spinner-type machines, *ABC*, *Easy*, and *Thor;* and one "automatic" machine; the *Launderall*. The *Bendix* and *Maytag* were reported in the February and May 1946 BULLETINS; the *Montgomery Ward*, *Sears Kenmore*, and the *Whirlpool* in the October 1946 BULLETIN; and the *Automatic Duo Disc* in the July 1946 BULLETIN, making a total of 14 post-war machines tested to date. CR has been unable to secure a Westinghouse *Laundromat* as yet, but tests will begin as soon as a sample is available for this purpose.

ALL the machines reported in the present study, with the exception of the *Launderall* and the *Thor Automagic* were of the conventional type, and did not offer consumers any of the wonderful improvements which many have been led to expect in post-war models of practically everything in the appliance field. The *Launderall* was rather similar to the *Bendix;* however, with the *Launderall*, the clothes were inserted at the top, which seems much more convenient than the arrangement of the *Bendix* which provides for insertion of the clothes through a door at the front. Also, in the *Bendix* the basket containing the clothes revolves in one direction, but in the *Launderall* the direction of rotation is reversed four times a minute. This action is asserted by the manufacturer to prevent the clothes from getting tangled and bunched, and to give each piece individual washing action. The *Launderall* rinsed the clothes twice, as against three rinses for the *Bendix*, and used about 16% more water.

The working cycle of the *Launderall* with temperature control set for "Hot," was as follows:

(1) Machine fills with water at approximately 140°F (2 minutes); (2) washing period (15 minutes) with direction of rotation reversing every 14 seconds with a 1 second stop between reversals; (3) tub drains (2 minutes); (4) spins at 375 revolutions per minute (1 minute); (5) fills with water at 100°F (2 minutes); (6) first rinse (2 minutes); (7) drains (2 minutes); (8) spins (1 minute); (9) fills with water at 100°F (2 minutes); (10) second rinse (2 minutes); (11) drains (2 minutes); (12) spins (7 minutes). Total



Thor Automagic, Model 200C

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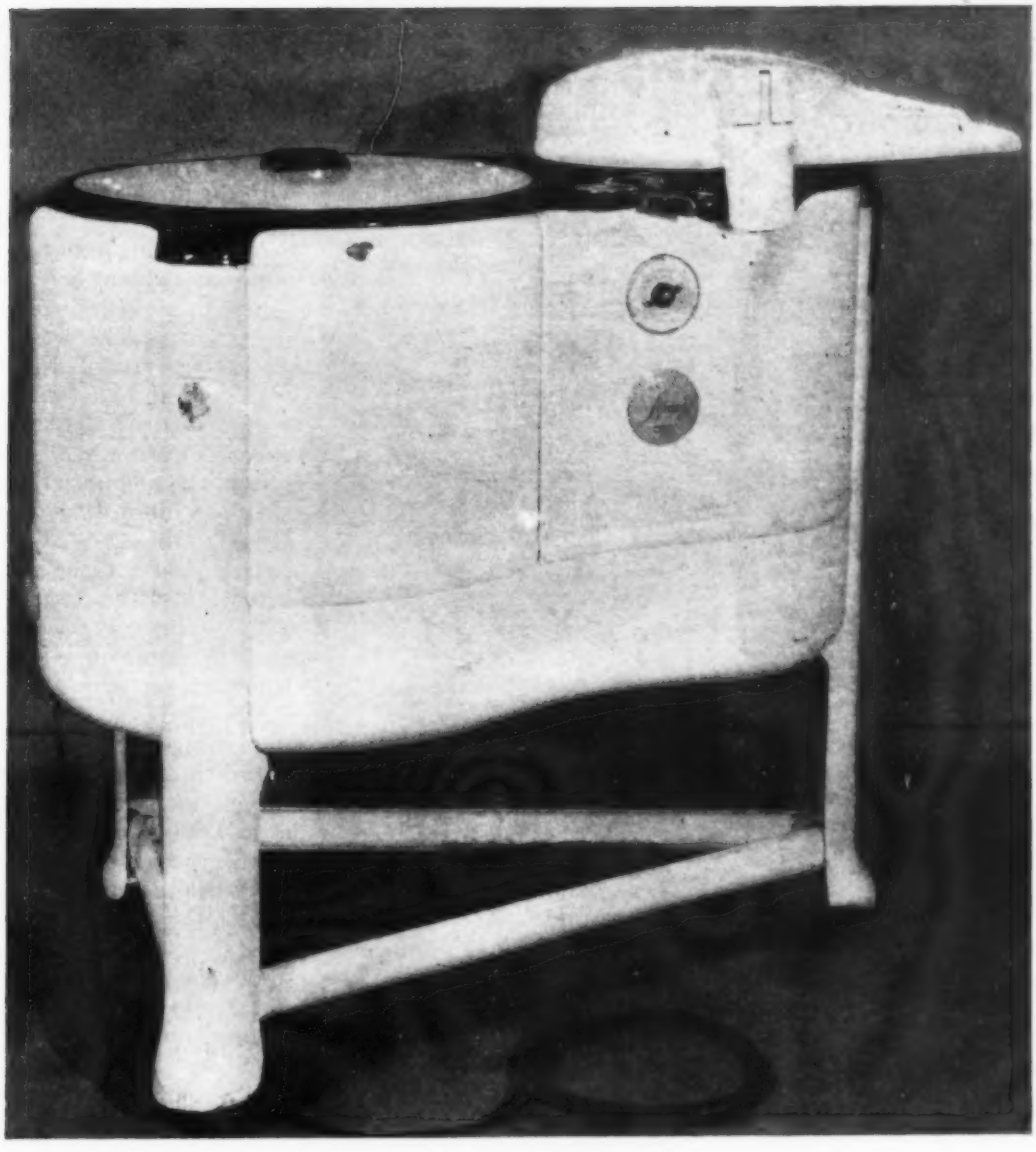


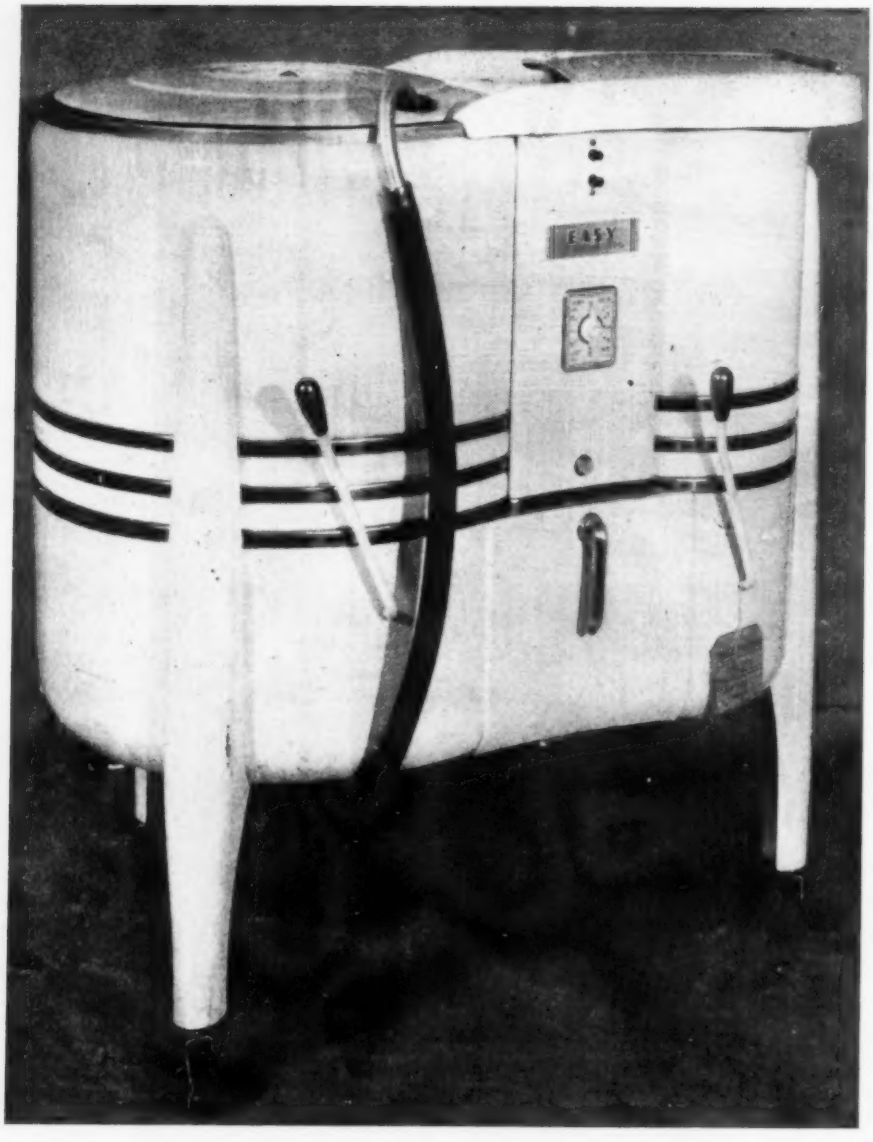
ABC, Model 177

time for complete cycle, approximately 40 minutes. (Actual times for the sample tested differed slightly from the above, the total time being 38 minutes, 38 seconds.)

The duration of the wash, rinse, and drying cycles of the *Launderall* cannot be changed as it can be in the *Bendix*. This would appear to be an advantage as it will prevent the inexperienced housewife from shortening the time of the washing cycles and thereby reducing the machine's washing ability. The *Launderall* may be stopped at any time during its operation, the cover opened, and clothes inserted or removed. When the cover is again closed, the washing cycle continues from where it left off. The mechanical arrangement of the *Bendix* is such that the machine must not be opened during operation, that is, while there is water in it.

One disadvantage of the automatic washing machines is that only one load of clothes can be washed and rinsed in the 21 to 28 gallons of water required for the complete operation. With the non-automatic machines, several loads of clothes, if sorted into their different categories, e.g., table linens and cottons, colored clothes, socks, etc., can be satisfactorily washed with the same tub of water. Advertisements which show these automatic machines installed flush against the wall, and without a concrete block beneath, are misleading. The concrete block is necessary unless the floor is of concrete, and the machines should be installed well away from the wall to permit access in order to make repairs, when necessary. If this is not done, considerable labor is involved in removing the machine from its concrete base each time repairs are required.

The *Thor Automagic* was a combination washing machine and



Easy Spindrier, Model 18SS46

dishwasher. The washing machine had a conventional oscillating agitator, but differed from the other machines of the spinner type in that spin-drying of the clothes was done in the same tub as the washing operation. To avoid the housewife's criticism of washing dishes in the same machine used for washing clothes, the manufacturer provides a complete separate drum and cover, with water distributor, for dishwashing purposes, which are inserted after removal of the clothes washer unit consisting of the agitator, clothes tub, and balancer. This machine was not equipped with casters and was evidently intended to be located in one place; it did not, however, require bolting to the floor.

CR's Tests

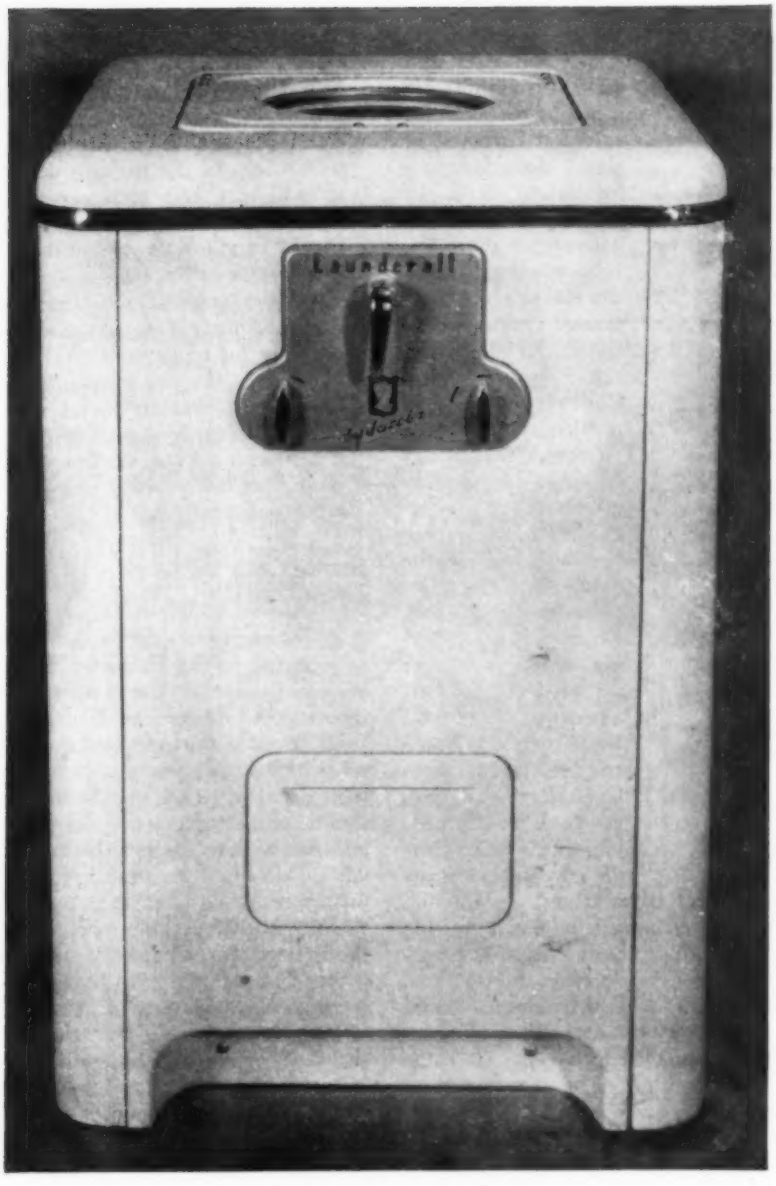
The tests made were similar (with certain exceptions noted below) to the tests reported in the February, May, and October 1946 BULLETINS, and included electrical leakage, proof voltage, washing and drying effectiveness, determination of wear on clothes, safety tests of wringer, an engineering examination, and a 100-hour endurance test. (In the case of the *Launderall*, this amounted to 150 of the complete cycles of operation detailed in an earlier paragraph.)

In the clothing wear and endurance tests, each machine was filled with the proper quantity of water and soap and then loaded with cotton sheeting and dish toweling material (which had been subjected to a preliminary de-sizing treatment). The weight of the clothes was recorded at the start of the test and after drying, at the end of the test; the difference between the two weights was a measure of the amount of wear.

It was interesting to note that although the *ABC*, Model 251-SP (which used a wringer for taking water out of the clothes), and the *ABC* spinner type, Model 177, used agitators of similar design (the wringer agitator had three fins and the spinner had four), the wringer-type machine produced considerably more wear on the clothes than did the spinner type *ABC*. A careful examination of the tubs of the two machines disclosed that the interior of the tub of the spinner-type machine was smooth, and the drain was under the agitator, where it did not come in contact with the clothes, but the tub of the other machine had bumps on the bottom, the drain and the bolt heads inside the tub being in the path of the motion of the clothes.

Wringers versus Spinners

In general, it takes from three to four times as long to "dry" (de-water) clothes in a spinner-type machine as in a power-wringer type, but the latter has one very serious disadvantage, namely, that in spite of all so-called safety releases, however these are advertised and whatever claims are made for them, the wringer is potentially a very dangerous piece of equipment, and as CR has pointed out previously (see CR's May 1946 BULLETIN), many fatalities and serious injuries have been caused by its use. Manufacturers are fully cognizant of



Launderall, Model LS-1

this danger, but apparently have not succeeded in eliminating it, have not indeed approached the problem from the radical standpoint which seems essential if a sound solution is to be reached. (This is an industry in which some real engineering and physical research needs to be done, and, judging by performance of the machines which CR has tested, is, in a surprising number of cases, not being carried out.)

The Voss Bros. Mfg. Co. go to considerable length in their Distributors Sales Manual to help the salesman overcome consumer resistance to the power-wringer type of washer by describing three tests: "The Sleeve Test," "The Necktie Test," and "The Hair Test" which they recommend that the salesman make as demonstrations (see reproduction of advertisement on page 18). We do not regard such sales methods as of a desirable type, for so far as laboratory tests would indicate, the *Voss* wringer is not safe under the conditions shown, and in fact, under the tests set by the Underwriters' Laboratories[1] for wringer safety (requirements which we consider too low to be satisfactory from the consumers' standpoint), the *Vo* seemed to be the least safe of the wringers tested, and required much the largest force to operate the safety release. No washing machine with a power wringer, irrespective of its high qualities in other respects, can properly receive an *A-Recommended* rating until such time as the designers can find means to equip such machines with a fully effective, easily operated, sure, safety device. We recognize that there are many who must purchase and use a wringer machine for various reasons, and CR will, therefore, continue to test and list them. However, to all who own wringer machines or may purchase them in the future, CR urges the utmost care and caution in operation, and the closest possible supervision of others who may do so, and of any children who may be about.

The non-automatic machines, with the exception of the *Thor*, were equipped with aluminum agitators. The *Thor* agitator was made of plastic. With aluminum agitators care must be taken to remove any undissolved soap when washing is completed, to prevent corrosion. Although all of the machines met the requirements for electrical safety, it is desirable, in view of the fact that the operators are generally working on a damp floor, to ground the washing machine frame permanently in each installation, by running a third wire from the frame to a good ground (water-pipe).

Ratings are cr47.

Washing Machines with Centrifugal Driers

A. Recommended

ABC, Model 177 (Altorfer Bros., Co., Peoria, Ill.) $169.95. Spinner type with agitator type of washing action, and equipped with self-timer which shut off the machine at the end of the period to which the dial was set by the operator. Clothing capacity

[1]The Underwriters' Laboratories require that a steadily applied force of not more than 20 lb. must suffice to release the rolls when they are set at their maximum pressure. (This pressure between the rolls is not to be greater than 800 lb. when there is no fabric between the rolls.)

Prove
"ELECTRO-SAFE"
WRINGER SAFETY
(on models equipped with "Electro-Safe" Wringer)
FIRST
Guar
wring
and
THE SLEEVE T
We recommend that a sleeve be inserted be
showing that the instant the arm comes in
safety functions operate.
THE NECKTIE
Reset the wringer, then insert the necktie, to s
the clothes — for example, a scarf which mi
neck, or a loose garment be caught in the w
the head, shoulder or any part of the body c
bar the safety functions operate automatical
THE HAIR TES
The Hair Test, which will recall to the obser
they have read about women being scalped
in the wringer rolls, consists of putting the hai
the head comes in contact with the bar both
no harm is done.

not stated. Required 18 gal. of water to fill tub according to manufacturer's instructions. Time required for pump to empty tub, 5½ minutes. There was no provision for storing the electric cord when machine was not in use, and controls were not clearly marked to indicate their purpose. Centrifugal drier or spinner was equipped with a safety device preventing operation of the spinner when lid of drying chamber was open. Washing effectiveness, fairly good. Effectiveness in drying clothes, excellent. (Water left in clothes was only 72% of dry weight compared to 97% for *Maytag*.) Wear on clothes, about average. Performance on endurance test, satisfactory. Over-all construction, good. Ease of cleaning tub, good. Ease of servicing, about average. Lubrication: No instructions for oiling were received with sample tested. Guarantee: Not supplied until customer returned post card which came with machine, giving information required by manufacturer. **2**

Easy Spindrier, Model 18SS46 (Easy Washing Machine Corp., Syracuse) $169.95. Spinner type with oscillating agitator. Equipped with timer which did not shut off machine but rang a bell at the end of a selected interval of time. Maker's capacity rating, 8 lb. of clothes. Required 16 gal. of water to fill tub according to manufacturer's instructions. Time required for pump to empty tub, 3½ minutes. Controls not clearly marked to indicate purpose, but except for the drain, were convenient to operate without undue bending over by the user. Washing effectiveness, fairly good. Effectiveness in drying, excellent. Wear on clothes, about average. Performance on endurance test, satisfactory. Over-all construction, good. Ease of cleaning tub, good. Ease of servicing, about average. Lubrication: Motor and gear case claimed to be oiled for life of machine. Pump required greasing every two to three months, and spin-drier basket drive shaft required oiling every three months. Guarantee: Against defective parts for one year from date of purchase. **2**

B. Intermediate

Thor Automagic, Model 200C (Hurley Machine Division of Electric Household Utilities Corp., Chicago 50) $169.50, plus $95 for dishwasher. Spinner type with oscillating agitator, which by changing tubs and setting dishes in a basket can be converted to a dishwashing machine. Maker's capacity rating, 8 lb. of clothes. Required 8 gal. of water. Time required for pump to empty tub, 1¼ minutes. Washing effectiveness, fairly good. Effectiveness in drying clothes, excellent. Over-all construction, judged fair. Ease of cleaning tub, good. Ease of servicing, poor. Failed in endurance test after 9.2 hours of operation with motor becoming too hot to touch, but when the machine was dismantled, the condition of the parts indicated that the failure was probably due to damage in shipment; thus quite possibly this defect should not be charged against the washer. It has therefore been given the benefit of the doubt on this point, in the rating. Removable clothes tub had a porcelain enamel finish, hence would require careful handling to prevent damage. Lubrication: No instructions provided for oiling machine. Guarantee: Against defects in material and workmanship for one year from date of purchase. If used for commercial purposes, guarantee period was 90 days. This rating applies only to the machine as a clothes washer. Results of dishwashing tests will be reported later. **2**

Important Note re Launderall

Preliminary tests of the *Launderall* as reported in the February Bulletin indicated a rather low washing effectiveness, but careful check of the machine revealed that the amount of water (which was automatically admitted to the machine) was significantly less than that indicated as required by the manufacturer in his installation manual. This could be due to either low water pressure in the mains or to failure of the mixing valve to function as the manufacturer intended. CR has found that the amount of water used often markedly affects washing effectiveness in washers. The machine is therefore being adjusted so that the quantity of water as specified by the manufacturer is supplied for the washing cycle, and then will be retested for washing effectiveness. In the meantime, this machine is tentatively rated *B. Intermediate*. If the washing effectiveness on the second test proves to be satisfactory, the *Launderall* may warrant an *A. Recommendation*.

Launderall, Model LS-1 (F. L. Jacobs Co., Detroit) $299.95, Zone 1. Fully automatic, rotating-cylinder type. Maker's capacity rating, 10 lb. of dry clothes. Effectiveness in drying clothes, good (about the same as *Maytag*). Wear on clothes, about average. Vibration both during washing and spin-drying, considerable. In endurance test, squeak developed when cylinder was rotating; driving belt broke after 48 cycles. Test completed without further evidence of wear after belt was replaced. Door on front of ma-

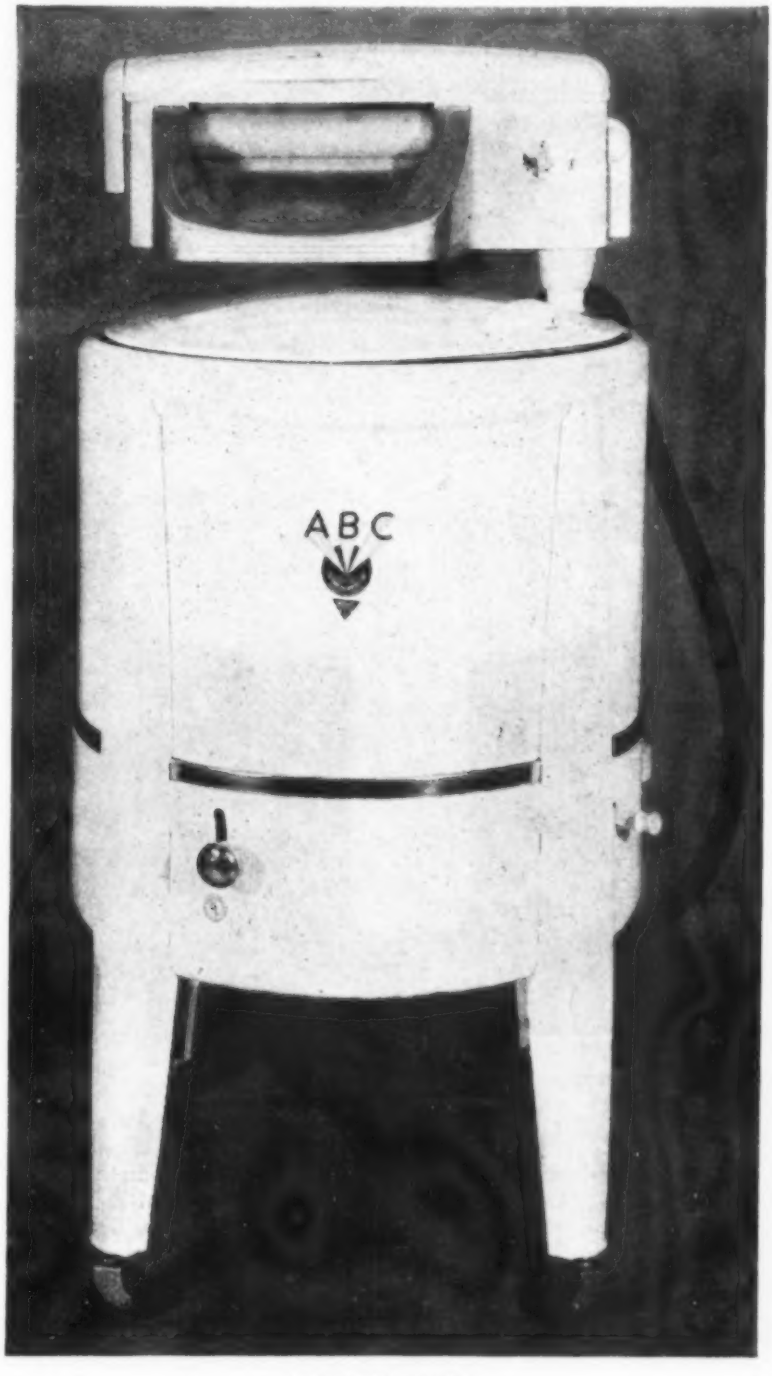
chine, through which access was obtained to mechanism, lacked any locking device, such as a self-locking latch; this would seem to be a hazard to a small child who might open the door and get his hand caught in the moving belt. Cleaning of tub, difficult. Ease of servicing, about average. Construction, judged good. Lubrication: Manufacturer claims no oiling of parts is necessary. Guarantee: Not supplied until customer returned post card which came with machine, giving information required by manufacturer. **3**

Washing Machines with Power Wringers

B. Intermediate

ABC, Model 251SP (Altorfer Bros. Co., Peoria, Ill.) $119.95. Conventional non-automatic with agitator type of washer action and power wringer. Maker's capacity rating for amount of clothes not given. Required 18 gal. of water. Time required for pump to empty tub, about 2 minutes. Lacked switch to turn motor "on or off." Lacked provision for storing cord when not in use. Controls not convenient to operate without undue bending and not clearly marked to indicate purpose. Washing effectiveness, fairly good. Effectiveness in drying clothes, good. Wringer pressure was not adjustable and was difficult to reset after being released. Wear on clothes, much above average (see text). Performance on endurance test, satisfactory. Over-all construction, good. Ease of cleaning tub, good. Ease of servicing, about average. Wringer found to meet Underwriters' Laboratories' requirements as to force required to operate emergency release (see text). Lubrication: Wringer head required oiling about every three months. Oil bath of driving mechanism required adding 1/3 pt. of oil after several years. Wringer mechanism to be greased as needed. Agitator cap to be oiled every three months, and wringer pedestal every six months. For guarantee, see *ABC* spinner type. **2**

Apex, Model 5-390 (The Apex Electrical Mfg. Co., Cleveland 10) $119.75. Conventional non-automatic, with agitator type of washing action, and power wringer. Time required to drain tub, 4¼ minutes. Maker's capacity rating, 8 lb. of clothes for 18-gal. tub. Lacked switch to turn motor "on or off." Also lacked pump for draining tub (inconvenient). Controls not convenient to operate without undue bending, and were not clearly marked to indicate purpose. Washing effectiveness, very good, only slightly below that of *Maytag*, reported in the May 1946 Bulletin. Effectiveness in drying, very good. Wear on clothes, about average. Performance on endurance test, satisfactory. Over-all construction, fair. Ease of cleaning tub, good. Ease of servicing, poor. Wringer found to meet Underwriters' Laboratories' requirements as to force required to operate emergency release (see text). Wringer rolls continued to revolve after safety release had been oper-



ABC, Model 251SP

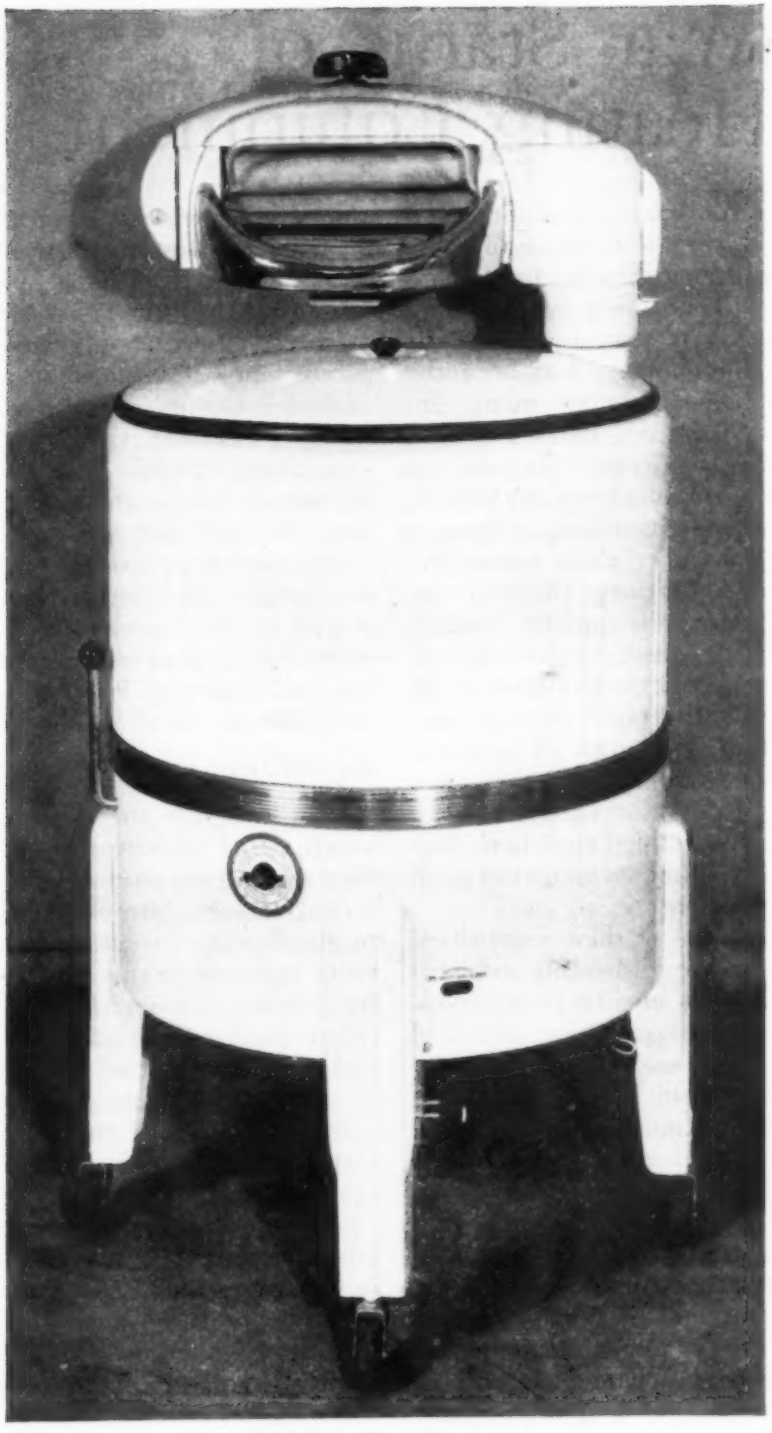
Apex, Model 5-390

ated. Operation of release mechanism resulted in end lock jumping out with great force; this could be a hazard in some circumstances to the operator or a child standing nearby. Lubrication: Machine claimed to be lubricated for life under conditions of normal usage. Guarantee: Against defective parts for one year from date of purchase. **2**

Universal, Model WM-2738 (Landers, Frary & Clark, New Britain, Conn.) $129.95. Power wringer type with agitator type of washing action. Equipped with self-timer which shut off the machine at the end of the period for which the dial was set by the operator. Maker's capacity rating, 9 lb. of clothes. Required 18 gal. of water. Time required for pump to empty tub, 3¾ minutes. Controls not convenient to operate without undue bending and purpose not clearly marked. No hanger provided for drain hose when not in use. Washing effectiveness, good. Effectiveness in drying clothes, very good. Wear on clothes, somewhat above average. Performance on endurance test, satisfactory. Over-all construction, good. Ease of cleaning tub, good. Ease of servicing, about average. Wringer found to meet Underwriters' Laboratories' requirements as to force required to operate emergency release (see text). Wringer rolls continued to revolve after safety release had been operated. Operation of release mechanism resulted in end lock jumping out with great force. Lubrication: Only oiling necessary claimed to be at time of first assembling of washing machine when a few drops of oil or grease on wringer posts or caster shafts are required. Manufacturer recommends a little soapy water as lubricant for wringer roller bearing. (Oil not used on this.) Guarantee: Against defects of material (except cords and plugs) for one year from date of purchase. **2**

C. Not Recommended

Voss, Model 41CP (Voss Bros. Mfg. Co., Davenport, Iowa) $119.50, Zone 1. (*Model 41C*, at $109.50, Zone 1, is similar but lacks pump. *Models 41EP* and *41E* are essentially the same as models mentioned above except for a slightly different drain board and the addition of a timer. These list at $129.50 and $119.50, respectively, in Zone 1.) Non-automatic wringer type with agitator-type washing action and power wringer. In this machine the agitator was of an unusual style, with vanes pointing downward. Manufacturer will supply a conventional type of agitator if desired. Maker's capacity rating for amount of clothes, not given. Required 14 gal. of water. Time required for pump to empty tub, about 3 minutes. Lacked provision for storing cord when not in use. Controls not clearly marked to indicate purpose, but except for the pump, were convenient to operate without undue bending. Washing effectiveness, comparatively low (lowest of eight machines tested to date). Effectiveness in drying, very



Universal, Model WM-2738

good. Wear on clothes, lowest of any machine in present test. Performance on endurance test, satisfactory. Wringer failed to meet Underwriters' Laboratories' requirements as to force required to operate emergency release, maximum force required being about 27½ lb. Operation of release mechanism resulted in end lock jumping out with considerable force. The machine had one very desirable feature, in that operation of the wringer release mechanism automatically shut off the power, by throwing off the motor switch. Lubrication: Agitator posts required oiling every three months, and motor once a year. Guarantee: Against defects in workmanship or material for one year from date of purchase. **2**

* * *

Since the above was written, additional tests of washing effectiveness of the *Launderall*, using 9 gallons of water in the wash period, have been completed. The results while slightly better than those originally obtained in the preliminary test were not sufficiently high to warrant giving the machine a higher rating. The original comment "washing effectiveness comparatively low," is therefore correct. The total amount of water used by the *Launderall* for the complete cycle was approximately 16 gallons of hot water at 175°F to 178°F plus 9½ or 12 gallons of cold water at 65°F depending upon control setting.

★ ★ ★ ★ ★ ★

Corrections and Emendations to Consumers' Research Bulletins

Water Softeners
Col. 131
ACB '46-'47

Delete Chicago Chemical Products Co. as source for sodium sesquicarbonate and a mixture of tsp. and tspp.

Col. 291, middle of first complete paragraph
ABC '46-'47

Substitute "sodium soap" for "calcium soap." The sentence should read, "The potassium soaps (soft soap) have been found more irritating than sodium soaps; . . . . ." [The most-used soaps are sodium soaps.]

Watch and Clock Repair
Col. 386, 4 lines from bottom
ACB '46-'47

Mr. Wall's address was given, for brevity, as 20-32 36th, Astoria 5, L.I., N. Y.—The word street should appear after 36th, as Astoria also has a 36th *Avenue*.

Post-War Status of Domestic Heating Equipment

DESPITE mid-war claims for revolutionary developments, such innovations as magic boxes, pipes, and wires in the walls that would heat homes in an unprecedented fashion, the close of the first pre-war year, 1946, found the heating industry definitely lacking anything in the line of radical new heating devices. In fact, even conventional heating equipment continues to be high on the "hard to find" list, and a survey of all of the fuel industries indicates that anything even approaching the revolutionary is far in the future. We believe, therefore, that the lucky purchaser of a reliable pre-war type of boiler, burner, or stoker will not be likely to find his new equipment outmoded for several years to come, at least.

Domestic Oil Burners

An indication of the dearth of really new equipment in the oil industry is seen in a recent decision to forego the annual equipment show in connection with the industry's Atlantic City convention in March, on the ground that "there would be so little new to show."

The oil burner manufacturers have been too busy trying to fill a tremendous back-log of orders, in the face of widespread materials shortages, to devote much real attention to new equipment.

The scarcity of parts continues seriously to impede the flow of burners to the market. First, small motors were scarce almost to the point of being unobtainable, then transformers, controls, and pumps, and now, with a shortage of these continuing, piping, tanks, and even connecting wire are all difficult to obtain. One result of this shortage has been the local assembly of many unmatched spare parts and even "black-market" elements. Sometimes these makeshift units are given standard names and in other cases names are devised for them. In either case they are so frequently improperly designed, underpowered, and poorly controlled that all prospective purchasers are cautioned to examine all proffered burners carefully and to reject any that show signs of having been assembled elsewhere than in a well-known factory of good reputation.

In spite of these difficulties, the entire oil-heating industry has made steady progress toward the perfection of all of the component parts of conventional oil burners. Such elements as nozzles, valves, couplings, and controls are available in better designs than ever before. Considerable thought has been given to ignition points with resultant increased life and dependability. Improved cloth filters are available to replace the older wire mesh, which had a tendency to clog. Thus, while today's oil burner may not be at all revolutionary in design, it is better than before, when properly built and installed.

Currently the outstanding research effort of the industry is toward the satisfactory development of burners for utilizing the heavier and cheaper oils. Esso and Socony are among those reportedly experimenting with improved methods of vaporizing the heavier oils to make burner operation more economical but, of even greater importance, to fit tomorrow's burners more closely to new oil refinery trends.

In addition there is a continuing search for the long-desired, but still unfound, modulating burner or control that will proportion the heat generated to the weather or demand, rather than operating as gun and rotary oil burners do, on an all-on, all-off basis.

Jet Oil-Heaters

Very recently the "jet oil-heater" as announced by Stewart-Warner and others received considerable publicity in popular magazines. These units were originally designed for burning gasoline to heat the cabins of airplanes, where they had the important advantages of extreme light weight and compactness. (In the home these particular advantages are of much less importance.) The new units have a serious disadvantage in that when used in such a restricted space as is available in these very small furnaces, either gasoline or oil burns with an almost explosive roar. (On all airplane installations this noise was far above the level which could be tolerated in a home.) Therefore, unless it can be demonstrated that a way has been found to deaden this noise (and this will be difficult because it is inherent in the type of combustion), the disadvantage of noise may retard domestic accep-

tance of all the very compact burners.

The jet type of burner, because the air is supplied under pressure, can dispose of the waste gases through a small vent pipe, instead of the larger more cumbersome chimney.

Coal Heaters and Stokers

The two most widely publicized developments of the coal industry are the "*Anthratube*" of Anthracite Institute and the "*Smokeless Heater*" of Bituminous Coal Research (the trade associations of the hard and soft coal industries, respectively). The equipment when completed is to be licensed to independent manufacturers for production, as neither of the research groups is directly interested in the manufacturing or sale of coal-using equipment.

Anthratube

The *Anthratube*, widely described in the press and news magazines a couple of years ago as a simple inclined tube with coal being fed into one end and ashes emerging from the other, has, in the process of development, matured into the form of a combined boiler, mechanical coal feeder (or magazine), and automatic grate shaking device. Hampered by materials shortages, the *Anthratube* is now being put into very limited production.

Installations are reported as giving a high degree of heating comfort when not interrupted by the inevitable kinks or "bugs" inherent in almost all newly developed mechanical devices. One outstanding advantage of the *Anthratube* is the complete absence of smoke and soot, achieved through the use of anthracite, coupled with retention of fly-ash and dust within the confines of the boiler through the use of induced rather than forced draft. The induced draft is produced by a fan on the chimney side of the burner unit.

The ashes from both the magazine and automatic coal-feed models drop into a can, of one bushel capacity, enclosed in the base of the boiler.

While a final price based on quantity production has not been announced, Anthracite Institute hopes that the price of the *Anthratube* will be comparable to that of an oil-burner boiler unit. However, with two motors (one for air and a second for coal feeding and grate shaking) and a complex system of controls, Consumers' Research feels that this may be optimistic.

Smokeless Heater

The *Smokeless Heater* of Bituminous Coal Research is at the present time of the parlor-stove type, although at least two independent manufacturers are reported to be working on similar models for cellar installation. Advantages claimed include freedom from smoke and clinkers, with week-end banking and rapid acceleration.

Independent developments in the coal-heating field include new boiler-burner units by Motor Stokor of Manheim, Pennsylvania, which is still in the development stage, and Catskill Metal Works of Catskill, New York, now being marketed. While neither of these could be considered revolutionary, both are compact well-designed units showing marked advances over pre-war models.

Gas Burners

The gas industry has little to offer in the line of novel equipment. In the annual equipment show of the American Gas Association at Atlantic City in October, gas house-heating equipment played only a small role, with practically no outstanding new developments in evidence.

In addition to the several factors that have retarded new developments in other industries, the gas people have a further very serious handicap in that many cities have already oversold the capacities of their gas systems. As a result, many municipalities refuse to accept new house-heating customers and others definitely discourage new connections. In fact, the situation is so serious in some localities that severe weather results in actual gas shortages, so that gas is sometimes unavailable for the company's customers. Furthermore, it will be difficult to amortize new gas plants or mains with such a highly fluctuating seasonal load as house heating, without materially increasing rates for gas for house heating. It is thus unlikely that any real expansion of gas house heating can take place other than through the introduction of natural gas, which, by reason of its materially higher heat value per cu. ft., automatically doubles the capacity of gas distribution systems.

Consumers contemplating installing gas-heating equipment are thus cautioned to make local inquiry concerning supplies and to be prepared, in many cases at least, for substantial rate changes in the near future; also for the possibility of heat being unavailable or greatly reduced at times in very severe weather.

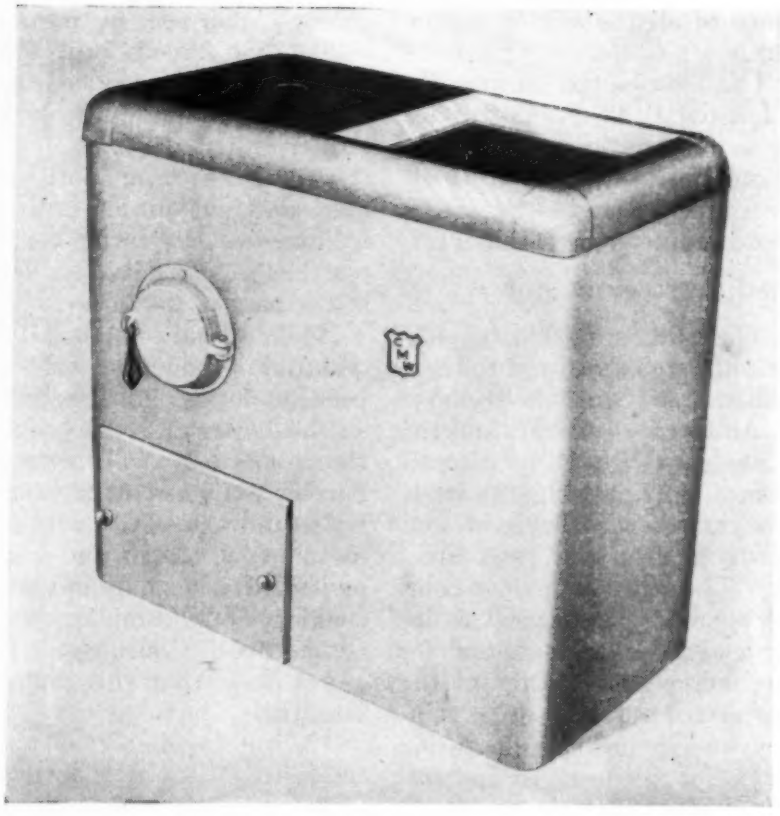
Electric House Heating

No article of this nature would be complete without a brief discussion of the prob-

ability of the more common use of electricity for home heating.

Electricity is unquestionably the ideal fuel, from every conceivable point of view except that of cost. There are so many losses and expenses between the fuel as delivered to the power plant and converted to electricity for delivery at the consumer's meter that, despite the industries' outstanding records of economy and progress, practically no electric companies can offer electricity at a cost which competes with either oil or coal. (Exceptions are the extreme Northwest and the Tennessee Valley where the combination of relatively mild climate and cheap water power makes it possible to heat small well-insulated homes for at least a reasonable price.)

As all electric heating is 100% efficient in its use of electrical energy, it really makes little difference in the cost whether the heating is of the conventional type or is one of the newer systems with concealed wires built into the walls. The latter will, however, probably give a greater degree of comfort at a lower temperature and thus indirectly save some electricity. The real drawback to electric heating is the basic inescapable fact that the cost per unit of heat sold to the consumer is almost invariably so much higher than in oil or coal that even large differences in heating plant efficiency do not materially change the situation.



Catskill Hot Water Maker

Electric Heat Pump

One new development in the electric heating field is of interest because, at first glance, it seems to overcome the cost differential and thus pave the way for the more general use of electric heating. This is the "Heat Pump" such as is being developed for the Edison Electric Institute. This system uses electricity only as a power source to concentrate and extract a small amount of the latent heat in cold water in such a manner that heat becomes available for the house in an amount some two and a half times as great as that bought in the form of electricity from the power company. However, there are at least two disadvantages which are likely to retard widespread use of the new system. The unit is limited to locations where a cheap, abundant supply of water is available; and the electric interests, like the gas companies, cannot afford to enlarge their systems for such a highly seasonal load, without materially increasing their rates per kilowatt-hour.

In brief there seems to be so little on the horizon of any of the leading fuels that now seems to be as good a time as any for the selection of heating equipment, provided, and here's the catch, that even the conventional equipment needed can be found on today's market.

New Oil-Heating Equipment

General Electric Co., Bloomfield, N.J. ● Low Pressure Atomizing Boiler-Burner Combinations. Although announced as having been redesigned, the principal change of consequence would seem to be in the design of the outer casing which would, of course, in no way affect performance.

Harvey-Whipple Co., 55 Emery St., Springfield, Mass. ● Changes in their line include a readily demountable power unit and a new "Dual Oxenizer" claimed to "increase the efficiency by giving a double charge of

oxygen." This can be viewed with skepticism as combustion engineers do not recognize the need for more oxygen, and in fact point out that it would actually reduce, and not increase, the efficiency of properly adjusted burners. (As is the case with many burners, the manufacturer states that deliveries cannot be made until the material and labor situation improves.)

Miller Co., Meridan, Conn. ● A vertical fire-tube boiler-burner unit with built-in circulating pump. This is a packaged unit, with a pot-type burner.

Gilbert & Barker, West Springfield, Mass. ● An "economy clutch" has been added to their line of oil burners which allows the motor and air fan to reach full speed before pumping of oil begins. The manufacturer claims decreased soot and better efficiency through full atomization from the very start; but burner engineers incline to the view that such extremely short periods of time are involved that the differences, if any, will be negligible.

Perfection Stove Co., 7609 Platt St., Cleveland 4 ● The "*Superfex*," a suspended unit which can be installed in any part of the house. Similar to the floor furnace type but with the advantage of a full mechanical burner with integral fan, pump, etc.

New Coal-Heating Equipment

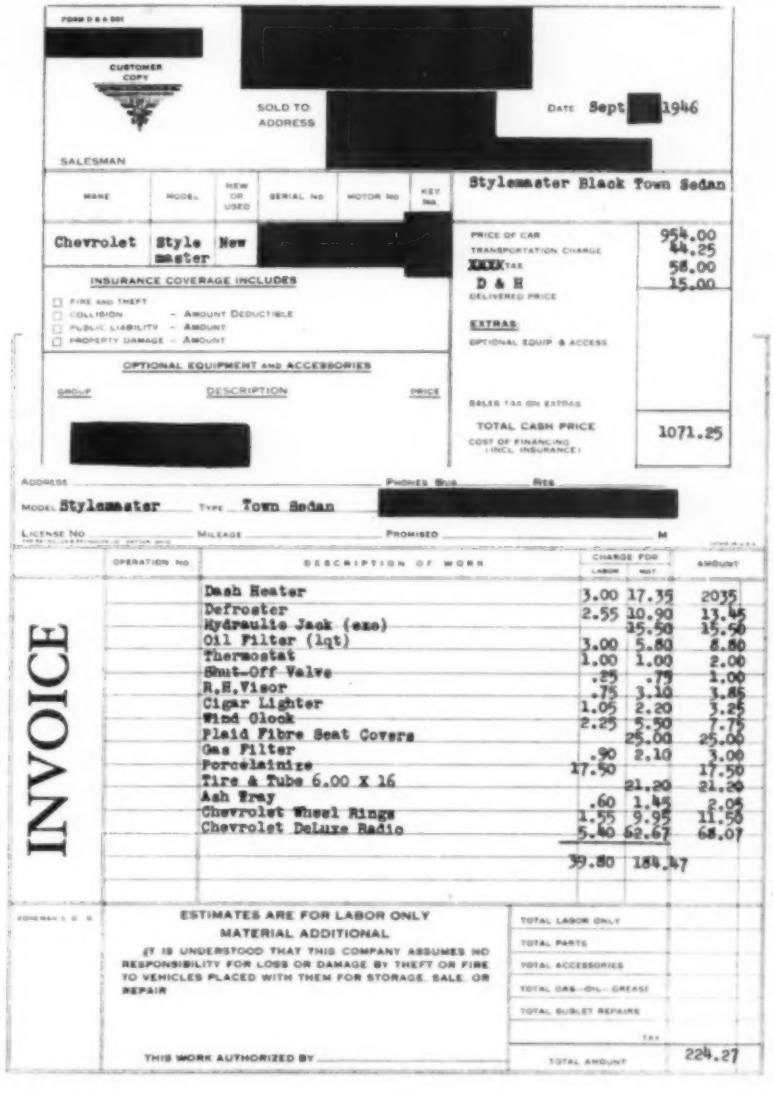
Automatic Coal Burner Co., 123 S. Broad St., Philadelphia ● *Anthratube*. A combined boiler-stoker unit with option of automatic or magazine coal feed. Automatic thermostatically controlled grate shaking. Maximum of 500 now being installed, with price on an estimate (contract) basis only. Unit designed for pea or nut sized coal with somewhat higher efficiency than conventional stokers, but pea or nut coal costs more than the buckwheat used by conventional stokers. Unit designed for 12 months operation, being used to supply hot water in the summer.

Catskill Boiler Works, Catskill, N.Y. ● *Catskill Hot Water Maker*. A combined stoker and water tube boiler designed for heating either small homes or service water. The unit has a designed capacity of 200 sq. ft. of net hot water radiation (plus piping and pickup) when used for heating, or 65 gallons of water per hour (100° rise) when used as a water heater. The maximum rate of coal feed is 4¾ lb. of rice coal per hour. Will also burn barley coal, but not buckwheat. Uses a 1/20 horsepower motor. Cost installed, $160 to $185.

Motor Stokor, Manheim, Pa. ● Compact well-designed boiler-stoker combinations, in the process of development.

The "Extra Equipment" Game Is on Again

REPRODUCED below are bills accompanying the sale of a new 1946 *Chevrolet*. The consumer who purchased this car did not order any of the 16 "extras" for which he was charged, except the radio, heater, and spare tire. The other unwanted items, including labor, in the tidy sum of $115, are apparently part of the extra price that has to be paid to persuade a dealer to sell one a new car these days.



CUSTOMER COPY

SOLD TO [redacted]
ADDRESS [redacted]

DATE Sept [redacted] 1946

SALESMAN

MAKE	MODEL	NEW OR USED	SERIAL NO	MOTOR NO	KEY NO.
Chevrolet	Style master	New	[redacted]		

Stylemaster Black Town Sedan

PRICE OF CAR	954.00
TRANSPORTATION CHARGE	44.25
XXXTAX	58.00
D & H	15.00
DELIVERED PRICE	
EXTRAS	
OPTIONAL EQUIP & ACCESS	
SALES TAX ON EXTRAS	
TOTAL CASH PRICE	1071.25
COST OF FINANCING (INCL. INSURANCE)	

INSURANCE COVERAGE INCLUDES
- ☐ FIRE AND THEFT
- ☐ COLLISION – AMOUNT DEDUCTIBLE
- ☐ PUBLIC LIABILITY – AMOUNT
- ☐ PROPERTY DAMAGE – AMOUNT

OPTIONAL EQUIPMENT AND ACCESSORIES

GROUP	DESCRIPTION	PRICE
[redacted]		

ADDRESS _____ PHONES Bus _____ Res _____

MODEL Stylemaster TYPE Town Sedan [redacted]

LICENSE NO _____ MILEAGE _____ PROMISED _____ M

INVOICE

OPERATION NO	DESCRIPTION OF WORK	CHARGE FOR LABOR	CHARGE FOR PART	AMOUNT
	Dash Heater	3.00	17.35	2035
	Defroster	2.55	10.90	13.45
	Hydraulic Jack (exc)		15.50	15.50
	Oil Filter (1qt)	3.00	5.80	8.80
	Thermostat	1.00	1.00	2.00
	Shut-Off Valve	.25	.75	1.00
	R.H.Visor	.75	3.10	3.85
	Cigar Lighter	1.05	2.20	3.25
	Wind Glock	2.25	5.50	7.75
	Plaid Fibre Seat Covers		25.00	25.00
	Gas Filter	.90	2.10	3.00
	Porcelainize	17.50		17.50
	Tire & Tube 6.00 X 16		21.20	21.20
	Ash Tray	.60	1.45	2.05
	Chevrolet Wheel Rings	1.55	9.95	11.50
	Chevrolet DeLuxe Radio	5.40	62.67	68.07
		39.80	184.47	

ESTIMATES ARE FOR LABOR ONLY
MATERIAL ADDITIONAL

IT IS UNDERSTOOD THAT THIS COMPANY ASSUMES NO RESPONSIBILITY FOR LOSS OR DAMAGE BY THEFT OR FIRE TO VEHICLES PLACED WITH THEM FOR STORAGE, SALE, OR REPAIR

THIS WORK AUTHORIZED BY _____

TOTAL LABOR ONLY	
TOTAL PARTS	
TOTAL ACCESSORIES	
TOTAL GAS—OIL—GREASE	
TOTAL SUBLET REPAIRS	
TAX	
TOTAL AMOUNT	224.27

Off the Editor's Chest

[*Continued from page 2*]

purchase of raw materials and semi-finished parts for re-manufacture, and as to the finished product (although not very widely used for that purpose) to determine just how well the product or appliance measures up with those put out by competitors.

Purchasing on the basis of specifications, which are standards of performance, material, and quality, enables progressive manufacturers and utility companies such as the Bell Telephone Company and some of the larger electrical utilities to save considerable sums of money in their buying, and to obtain products of definitely better and assured quality and character. The Bureau of Standards, and some other government agencies, work out specifications for articles that the federal government buys, from toilet and laundry soap for the Army and Navy, to inks and paper for use in government departments. The interest of consumers in standards of quality is that, theoretically, at least, prices will be set according to the quality of the product. If, for example, canned tomatoes are graded A, B, and C, it will be impossible for a canner to charge as high a price for a Grade B product as for a brand meeting Grade A requirements. Similarly, a product which fails to meet a minimum standard set, for example, for typewriter ribbons, or wood for furniture, will sell at a lower price than one which is well above the minimum limit set by the standard.

The process of determining just what constitutes high quality in insulated wire used for telephone installations, or what qualities are characteristic of good toilet soaps are not, however, matters to be arrived at by a committe meeting of professors of economics or sociology, social workers, or club women. Their interest in better conditions in general for the consumer is no substitute for a specific, detailed working knowledge of the technical subject matter of the problem.

In the Consumers' Advisory Board's attempt to compensate for its lack of specialized information and services of scientific experts qualified to dig up and deal with the technical bases for standards and specifications, hard-working stenographers and secretaries were from time to time dispatched to CR's offices to abstract and summarize the information in our technical files on certain topics. The volume and complexity of the information in CR's files alone were usually so great that the researcher would throw up her hands in despair at the thought of having to condense and put it into form usable by committees of non-technical people in the day or two at her disposal; she would then make a few notes, and vow to come back later for further details, if there should be time. There never was.

After the death of the NRA, the Consumers' Advisory Board hung on in one form or another on the periphery of some one of the regular government departments until the host of special pre-war planning and wartime executive agencies began to make their appearance. Many of the Board's original personnel and their friends were given an opportunity to go to work on their old projects when the Office of Price Administration was created. Drawing heavily on the previous, if limited, experience, of the Consumers' Advisory Board, the OPA went to work earnestly to set price ceilings, and it had a feeling that these should somehow be geared to quality standards. In the food field, the OPA was lucky in that many standards had already been set, but in the field of appliances, appliance parts, automobile parts, textiles and clothing, the problem was, as before, too difficult to be dealt with by untrained "experts," and the OPA people were again faced with the discovery that they had no groundwork for evolving workable standards of performance as a basis for price setting.

Although the OPA, because of its war powers derived from the Congressional grant of powers to the President, was able to command the services of some technical men from industry, its supervisory people were still unable to utilize the services of such people because they suspected the industrialists of uniformly selfish or dishonest motivations, and they neither understood nor appreciated the problems of technology and of manufacturing; they never did come to understand why some layman's or economist's opinion was not as good as a *measurement* or calculation based on objective determinations. OPA never did succeed in setting effective standards, apparently never came to know why its staff was not able to do so.

Perhaps the most striking example of the OPA's ignorance even of the methodology of setting standards was that of tenderloin of beef, which was unobtainable during the ration period *except by hotels and restaurants which purchased it as part of a carcass of beef*, because the OPA's regulation writers found it too difficult to formulate a legally satisfactory statement of what tenderloin of beef was, so that they could list the prices at which it was to be sold as an over-the-counter cut.

Standards of quality, of identity, or of performance cannot be pulled out of a hat by any number of economists or welfare workers or sociologists, nor can they be evolved by calling conferences of highly-qualified technical men pre-

sided over by the economists or sociologists who tell them how to approach or evaluate their problems. Neither can the essential elements that go into such standards be abstracted from CR's or the Bureau of Standards' files in a day or two, or a week, by researchers, however diligent, with no training in specific technologies or the exact sciences. The process of working out such standards and specifications is a slow one at best. Theoretically the job might be done by a conference working through subcommittees of well-trained, consumer-minded engineers and scientists representing the public's interest, after close and detailed conferences with expert representatives of the various manufacturing and consuming industries involved. Neither group could do it alone. (Though they might write the standard, it would not stick or "take," and it would remain, as so many standards do remain, printed words on pieces of paper.)

At least one trade association looks upon its standards as one of its most precious secrets. When CR recently issued a report on tests of washing machines, which compared, among other things, the washing effectiveness of various makes, the secretary of a trade association of the industry criticized the test results and offered to lend CR a copy of the association's Test Procedure Manual, *provided* we would agree not to copy the manual, lend it to anyone, or make reference to it. Furthermore, the offer was contingent on CR's agreeing to discontinue present methods of making comparisons between washing machines; the secretary had the feeling that making comparisons between the performance of washers of different makers was a wholly impermissible procedure, that civilized people simply would not tolerate this type of investigation and report, and his association had worked out a system by which washing machines could be tested *without comparing them with each other*. That was felt to be a great advance in washer technology.

A somewhat parallel situation exists in the automobile industry where standards have been very effectively worked out for the purchase of things which automobile manufacturers buy and use, such as metals, alloys, fittings, bolts, lamps, etc.; yet standards are non-existent by which consumers could judge the product which the motor car manufacturers build. The car manufacturer's interest in standards, in other words, stops right at his shipping room door. He likes standards for himself when buying, but finds them wholly unsuitable for use of the people to whom he sells his product.

With the blind worship of non-technically trained people on one hand for anything labeled "consumers' standards" and the insistence of the trade on keeping working standards of performance secret and not open for discussion, progress in formulating effective, workable standards and definitions of what is first quality and performance in a washing machine, mechanical refrigerator, electric iron, toaster, electric range and heater are not likely to make much headway. At the present stage of development of the field, one thing is certain: Consumers had better be wary of groups advocating that grades and standards be made compulsory. With a rather wide knowledge of the whole field of standardization and specifications, we know of almost no standards, even in the field of canned foods, that are sufficiently well drawn and sound in principle to be really satisfactory.

An instance of this situation is seen in Grade A canned peaches, those smooth, perfectly matched, firm halves that are again beginning to make their appearance on the grocer's shelf. As many will agree who have had an opportunity to taste tree-ripened, home-canned fruit, there are several varieties which are too delicate to withstand commercial handling, that rate much higher on flavor and eating qualities in general, but would be graded lower because of a tendency to what the trade would call softness or mushiness. In other words, grades established as top quality do not accurately reflect *consumers'* preferences; they reflect rather what the trade prefers, for strictly commercial reasons, and thinks consumers should prefer, and in nearly all of the government grading of fruits, vegetables, meats, etc., the consumer's point of view has not been reflected in the standards and specifications that have been written and promulgated.

In the present state of the consumer movement, what is needed far more than standards and specifications, is more and more widely diffused knowledge of what is required of a product, more tests and investigations by technically qualified consumer experts, and test reports such as those of CR, in terms of brand names. The successful evolution of grades and standards for the multitude of items that consumers buy, calls not only for their formulation by highly trained and skilled consumer-minded experts, but for an intelligent appreciation on the part of consumers of what they want in and expect of such standards. Some excellent groundwork in studying and evaluating particular appliances from a performance and utility standpoint is now being done in a few institutions, among which may be mentioned Cornell University's School of Home Economics; Virginia Polytechnic Institute; the Home Economics Departments of Montana State College, Rhode Island State College, and the University of Maine, and of the Washington State College at Pullman. These are institutions where home economics is looked upon as having a great deal to do with what might be called "domestic engineering," dealing with the technical and scientific problems of the household.

The Virginia Polytechnic Institute's study of 15 different

coffee makers was a recent case of particular interest. Probably many more colleges would follow the example of this type of work if they realized how important such investigations are to the future education of consumers and to the better providing of goods of kinds which fulfill their functions effectively and economically. When a larger accumulation of information of this kind has been provided, technically trained representatives of consumers will be in a better position to understand and effectively formulate quality grades and standards for the products which they buy.

Sunlamps ★ ★ ★ ★ ★ ★

Bring the Outdoors Indoors
PEDIATRICIANS recommend
ULTRAVIOLET FOR BABIES..
Look better in just 3 minutes!
Wherever you go- wherever you are-
YOU CAN ENJOY THE FULL BENEFITS OF ULTRAVIOLET BATHS

WHEN scientific men explain a new bomb as atomic, that name is bound to appear as the trade name or a part of the description of many commercial products. Likewise, when the medical profession begins to get interested in new conceptions of therapy, commercial interests are prone to step in at once and to go far beyond the accepted scientific facts. This tendency has led to exaggerated claims as to the "health angle" of many things from cosmetics to breakfast foods, and is such a certain development that it may properly be characterized as the standard practice of the advertising business. Sources of radiant energy, ultraviolet, visible (light), or infra-red, have been no exception to this trend.

The only physical distinction between these various radiations is in the relative wavelengths of the flow of energy that constitutes them. The eye is sensitive to radiations of wavelengths in the range from about 4000 to 7000 angstrom units[1], with the maximum sensitivity occuring around 5500 A.U. Beyond the shorter wavelength end of the visible spectrum, that is, beyond the violet, lie the *ultraviolet* regions. These are classified according to wavelength as the *"near ultraviolet,"* 4000 to 3200 A.U., the *"middle ultraviolet,"* 3200 to 2800 A.U., and the *"far ultraviolet,"* 2800 to 2000 A.U. On beyond these regions lie the *"very far ultraviolet,"* the *X-ray* and other very penetrating rays. At the opposite end of the visible spectrum, beyond the red, lies the *infra-red* region, which extends from about 7000 to 600,000 A.U.

Certain portions of the body are more or less continuously exposed to varying amounts of one or more of these forms of radiation. Out of doors on a clear day, all three radiations are received at the same time. Indoors, back of an ordinary glass window, only the visible and infra-red radiations are received, since the glass absorbs practically all of the ultraviolet. At night, the reading lamp furnishes both the visible and infra-red radiations, while with the lamp turned off infra-red radiation still may be received from

[1] angstrom unit (abbreviated A. U.) = 1/10,000,000 millimeter = 1/254,000,000 inch

a radiator, hot stove, or any other heated object.

It is generally assumed that sunlight (providing all three types of radiation) is necessary to the normal growth processes of men and animals. Attempts to show such effects have been generally negative, however. Diet has been found to be of greater importance than whether the body is exposed to light. This is not to be taken to mean that there are no beneficial effects to be received from irradiation by one or all of the wave bands under consideration, but that such radiations are not necessary to life and growth.

To have any effect on the body, radiant energy must be *absorbed*, be it ultraviolet, visible, or infra-red. When absorbed by a perfect "black body" these radiations are transformed into heat, but the human body is much more complex in its action. As a result, certain wavelengths of radiation will produce heat when absorbed by the body, while others cause photo-chemical reactions. The physiological effect, then, is first physical, second chemical, and finally biological. The end results of irradiation may be delayed as these actions proceed from one stage to the next. Authorities differ as to the depth of penetration of any of these radiations into the body, but that is not so important as the reactions that are produced. Certain of these reactions are quick and comforting, others slow and insiduous.

The sun is nature's source of all these radiations, but the atmosphere surrounding the earth serves to limit the quantity of radiation of certain wavelengths that reaches the earth's surface. Water, either as a liquid or as water vapor, is effective in absorbing infra-red energy. It is only this condition that serves to prevent the intense heat rays from the sun from destroying life on the earth, rather than producing the temperate heat which makes life safe and enjoyable. This same atmosphere likewise absorbs the "far ultraviolet," with the result that less than 1/10 of 1 percent of the radiant energy received from the sun is in this shorter wavelength region. The cut-off is sharp and complete; the energy received at 2900 A.U. is only about 1/1,000,000th that at 3150 A.U. and only 1/40,000,000th that in the visible region where radiation is at a maximum. At shorter wavelengths the proportion is even less. Radiation from the sun is in what is known as a "continuous spectrum," which is to say that radiation is received in all wavelengths from the lowest to the highest, though the intensity varies over a wide range from one region to another.

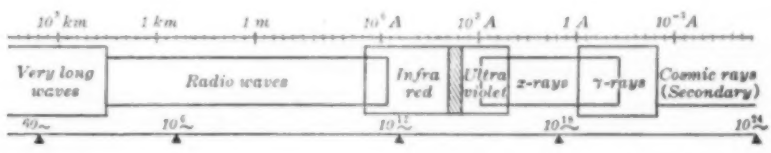
Controlled sun-bathing, under a doctor's supervision, has been shown to be of definite value in the treatment of certain diseases. Such sun-bathing normally is done out of doors, with no paraphernalia other than blankets and other means to provide comfort and privacy, though the use of certain special glasses has made it possible to sun-bathe back of windows. Opinion is divided as to the parts played by visible light, ultraviolet, infra-red, moving air, and other factors. Investigation of these factors individually has led in turn to the conclusion that each may have desirable or curative applications. The publication of these findings

About 20 years ago, there was a great vogue for ultraviolet lamps, and also for window glass of a special type that was asserted to transmit the ultraviolet rays of sunlight. The public concern with ultraviolet radiation lasted for several years and then interest waned.

Toward the end of the war, ultraviolet lamps again became a topic of commercial interest, possibly because they were one of the relatively few items that could be made during a period of restricted production of most electrical appliances. Department stores, drug-stores, and house-furnishing stores featured sunlamps again, on a large scale, in their advertising. As a result of this, the public has again become "ultraviolet conscious," and many have come to feel that the health of themselves and of their children is precariously poised if they fail to do something about it by taking regular irradiation with an ultraviolet lamp of some sort.

Aside from the health angle, there is the question of the cosmetic value of ultraviolet light in causing a "healthy" browning or tanning of the skin. To many, no doubt, a well-tanned skin and robust health appear to go together. Actually the relationship is not so simple; indeed there are circumstances in which ultraviolet radiation is dangerous, or, at the very least undesirable. For example, a paper recently read before the New York Academy of Medicine by Dr. Frank E. Adair advised that persons past middle age or "those who have an aging skin" should avoid sunburn.

The accompanying article discusses the problem of sunlamps, so-called. The subject of heat lamps, which emit another type of radiation that has been heavily exploited by commercial advertisers and salesmen, will be discussed in an article to appear in a subsequent issue.



—Illustration from An Introductory Course in College Physics, by N. Henry Black, by permission of the publisher, the Macmillan Company

The diagram shows the whole range of radiation from the very long rays having a frequency of 60 per second (corresponding to a wavelength of 5000 kilometers) to the very short waves of 1/1000 of an angstrom (1 ten-billionth mm.). The visible spectrum, indicated by the shaded section, is seen to correspond to only a very small part of the total range of wavelength.

no doubt has been responsible largely for the claims that have been made in the past by manufacturers in some cases, and by sales-people in other cases, as to the efficacy of various artificial sources of radiation. Then too, the salesman or advertiser finds it much more impressive to speak to the prospective purchaser of the use of an ultraviolet lamp or an infra-red lamp than to refer to sun-bathing or the use of a hot-water bottle or heating pad.

To meet the demand which has been created because of the wide publicity given certain facts—and many unsupported claims—as to healing and health-giving powers of radiant energy, many sources of this energy have been developed and placed on the market, some as sunlamps and others under equally attractive names. *None of these devices gives a spectral energy distribution which has the very important property of matching that of sunlight.*

The closest approach to sunlight, yet far from being like it in radiation, is the carbon arc which formed the basis for the early sunlamps. When filtered to cut out radiations shorter than 2900 A.U. and longer than 40,000 A.U., these lamps had spectral limits similar to the sun, and likewise a continuous spectrum, except for the cyanogen band at 3890 A.U. Other sunlamps usually have used a mercury arc source, which gives radiation principally in intense spectral lines, which are in no way comparable with the sun's spectrum. In these lamps the principal wavelengths of the radiation emitted are dependent upon the vapor pressure of the mercury in the tube and the material of the enclosing bulb. The lower this vapor pressure, the shorter the wavelengths in which the greatest energy is generated. When the bulb is made of quartz, practically all of the generated ultraviolet wavelengths are transmitted by the bulb; certain glasses serve to cut out the shorter wave bands but transmit the longer wave ultraviolet radiations. Still other lamps combine mercury-arc radiation with that from a hot filament, thus combining the line spectrum of the mercury with the continuous spectrum of the filament. Now we are promised a fluorescent sunlamp which would combine the mercury line spectrum with the continuous spectrum of the phosphor (special powder) coating of the tube.

The ordinary incandescent lamp would give off a small quantity of ultraviolet radiation if the bulb were of glass which would transmit this energy. Since the usual glass bulb does not transmit ultraviolet, the radiations from these lamps are limited to the visible and infra-red regions. The hotter the filament, the greater the proportion of energy in the visible range, and the less in the infra-red. Hence, for use as a source of infra-red, lamps usually are so constructed as to operate at lower filament temperatures.

Many of the lamps that are offered for use as sunlamps or as sources of infra-red have "specially constructed reflectors." The reflector acts only to direct the rays that may fall upon it and *cannot contribute anything additional to the radiation.* Recently lamps of the sunlamp and infra-red type have appeared in which an integral reflector is provided. Such lamps eliminate the necessity for the reflector stand so frequently offered (at a sizable sum, a considerable proportion of the total cost of the equipment) and make it possible to use a simple goose-neck or bridge lamp stand to support the lamp for use. These reflector type lamps are designed for use directly from the usual lighting circuit, and do not require any transformer or other auxiliary equipment.

When inquiry is made in the stores concerning the comparative merits of the various lamps offered, the salesperson usually recites figures as to the time of exposure under each lamp to produce the equivalent effect of an hour in the sun. For instance, it may be said that lamp M in three minutes will give the effect of one hour in the sun while lamp N requires ten minutes for the same effect. That may be sufficient for the comparison of two lamps in one respect, but unless more information is given as to the equivalent sunning, it is practically meaningless. The effectiveness of the sun varies with the time of day and with the latitude in which exposure is to be made. It is always difficult to say on what basis a salesperson quotes such figures, and the salesman himself will be most unlikely to know anything about the scientific bases for his information, if any; yet there are definite scientific bases for making such comparisons. In the case of sunlamps, the usual basis of comparison is through a measure of *erythemal effectiveness* (ability to produce "sunburn"), which takes into account the energy distribution according to wavelength and the corresponding erythemal (sunburn) response of the average skin. Such evaluations are based on energy in the "middle ultraviolet" range only and *any appreciable amount of energy in the "far ultraviolet" is considered objectionable and dangerous* (though radiations in this wave-band are known to be active in destroying many types of bacteria or germs). Radiation in the "far ultraviolet" region acts to form ozone from the oxygen of the air and even very low concentrations of this are known to be quite toxic. (As little as one part of ozone in 25 million parts of air is irritating to the mucous membranes of the upper respiratory tract. The most conservative experimenters and authorities set the permissible maximum of ozone to be breathed at about 1/100 of a part per million or .01 ppm.) Such short-wave radiations (when they strike the eyes) act very quickly to cause conjunctivitis, if the eyes are not thoroughly protected at all times.

The "burn" from ultraviolet may take anywhere from a few minutes to a few hours to appear, depending on the exposure to which the skin is submitted. The

longest wavelength that can produce the effect is about 3150 A.U. and the effectiveness increases for decreasing wavelengths to 2967 A.U., then falls to a minimum at 2800 A.U. and again rises for shorter wavelengths. In erythemal response, blondes are found to be more sensitive than brunettes, and men generally more sensitive than women, while persons from 20 to 50 years of age generally are more sensitive than younger or older persons. In general, care should be taken to avoid overexposure to ultraviolet, either from the sun or from artificial sources, not only because of the danger from the burn but from deeper effects on the nerves, and on other bodily mechanisms. Sunlight normally is harmless to the eyes, but when the ultraviolet component is increased out of its normal proportion of the total radiation by reflection, as from sand, water, or snow, even this becomes dangerous, as evidenced by the effect sometimes known as "snow blindness."

In these days of vitamins, it is only natural that much should be made of the effect of sunlight and ultraviolet radiation in the production of vitamin D. This vitamin occurs naturally in relatively few foodstuffs and is abundant only in fish livers and fish-liver oil; it can be developed in others through irradiation with ultraviolet light. Exposure of the skin results in the formation of this vitamin within the body. Doctors report that the vitamin has a favorable influence on the body's utilization of calcium and phosphorus; vitamin D plays an important role in the formation and maintenance of the teeth, though contrary to some advertisers' claims it is known not to insure normal tooth structure nor to prevent dental caries (cavity formation). Vitamin D does have both a prophylactic and curative effect on the disease, rickets.

In the hands of a doctor, ultraviolet and infra-red radiations make useful tools for the treatment of many human ailments. It must be realized, however, that it is perfectly possible to do as much harm through the unknowing use of these treatments as through the use of drugs in a similar way by a person unacquainted with the reactions caused. For instance, there is little doubt that irradiation with ultraviolet will bring benefit to certain tuberculosis sufferers; yet the exposure may under some conditions cause quiescent foci of infection to become active. Such applications should most certainly be *only* under the guidance of a competent medical expert (physician). Again in the case of skin diseases, irradiation with ultraviolet gives a favorable response for certain types of disorders, but with other skin troubles it may produce injurious effects. Only a well-qualified physician is in a position to know when such irradiation is likely to be helpful or harmful. *Overexposure under certain conditions may produce serious illness or, in extreme cases, even death.*

Claims that have been made to the effect that ultraviolet irradiation improves the tone of the tissues or of the body as a whole, stimulates metabolism or tends to prevent colds in normal persons, have not been conclusively substantiated. It likewise would be possible to indicate various instances where heat might be used, as from an infra-red lamp, to the detriment or injury of the user. Home treatments doubtless have their place in the prevention, remedy, and cure of human ailments, but when tools as powerful (and *apparently* mild and harmless) as these radiation sources are available for use great care needs to be observed in their application. It is a part of the doctor's training to study these applications; for safe and successful home use, a properly qualified medical man should be the guide in every case.

With a remarkable and almost unprecedented fairness to the consumer, Montgomery Ward's 1946-1947 Fall and Winter catalog gives this recommendation, in clear and simple terms. It is to be hoped that other dealers and manufacturers will follow this very good precedent.

In an effort to protect the public from unsupported claims as to some of these devices, the American Medical Association prepared in 1932 "Regulations to Govern Advertising of Ultraviolet Generators to the Public Only" and followed this with minimum requirements for the acceptance of sunlamps for listing by the Association. The listing of "Apparatus Accepted by the Council on Physical Medicine of the American Medical Association," dated June 30, 1945, sets forth some of these requirements as follows:

> To comply with the requirements for quality of radiation, the ultraviolet spectral energy distribution of a sunlamp shall be comparable, in biologic effectiveness, to the ultraviolet emission of natural sunlight (clearest weather, midday, midsummer, midlatitude, sea-level sunlight). The spectral range of wavelengths from sunlamps shall be limited largely from 2,900 to and including 3,132 angstroms and shall not include an appreciable amount of ultraviolet of wavelengths shorter than 2,800 angstroms. (More specifically, the energy of wavelengths shorter than and including 2,800 angstroms shall not exceed 1 per cent of the total energy of wavelengths between 2,804 and 3,132 angstroms.)
>
> To comply with the requirements for minimum intensity, a sunlamp shall generate sufficient ultraviolet energy to produce a minimum perceptible erythema on the average untanned skin in not more than sixty minutes at a minimum acceptable operating distance of 24 inches. If the ultraviolet intensity is less than this, in the opinion of the Council the radiation is too weak to have any significant prophylactic effect against rickets.
>
> In accepting sunlamps, the Council requires physical evidence of their production of energy from 2,800 to 3,200 angstroms in wavelength at an intensity which is adequate and safe for use by laymen. It has been demonstrated both clinically and experimentally that adequate ultraviolet energy between 2,800 and 3,200 angstroms

plays an important role in deposition of calcium and may prevent rickets and may be an effective aid in promoting the soundness of bones and teeth. There is no warrant for the claim, however, that ultraviolet rays will insure normal tooth structure or that ultraviolet rays will prevent dental caries. Direct exposure of the skin to ultraviolet rays from the sun or from artificial sources results in the formation of vitamin D within the organism but the Council cannot recognize statements or implications that vitamin D has all the beneficial effects of exposure to sunshine. Advertising claims for sunlamps containing statements that exposure to ultraviolet radiation increases or improves the tone of tissues of the body as a whole, stimulates metabolism, acts as a tonic, increases mental activity or tends to prevent colds are not acceptable to the Council.

Of recent years, certain government agencies have likewise taken an interest in protecting the public against false and misleading statements as to the efficacy of certain of these sources of radiation. In one instance the Federal Trade Commission accepted a stipulation from a manufacturer to discontinue the following misrepresentations in the advertising of a certain lamp:

> That the rays produced. . .will improve glandular action, give the body nutrition or keep one healthy; that the device should properly be designated "sun lamp"; that the use of infra-red lamps will be an effective means of toning up the system and helping to throw off certain body ailments, or that their use will help nature in its curative powers by forming heat units in the blood, or be of any therapeutic value except as means to supply heat, and then only when heat is not contraindicated. . . .

Another Federal Trade Commission release indicates that a seller of "sunlamps" agreed to discontinue representing in its advertising that:

> . . .That the rays from the lamp are equivalent to those of the sun in physical or therapeutic properties and that through its use a person may enjoy all the health-giving benefits of sunshine; that. . . the use of the lamp will clear the complexion of blemishes, build resistance against colds and disease, assure sound teeth, stabilize the nerves, kill bacteria, shorten a patient's period of convalescence, and is an indispensable means to beauty. . . .

This discussion will have served its purpose if it leaves a conviction that radiations, while potent factors for human good when in the hands of those trained in their use, constitute an equally dangerous element when used without the benefit of such guidance. In spite of an early tendency to claim every good thing from their use, excellent publicity by the American Medical Association and some action by government control authorities has removed much of this from formal advertising. However, there still is no way to prevent the ambitious salesman from using the old sales talks or "line" in order to bring in a sale. In almost any case it will be best to consult your doctor before investing.

RS Type Lamps

A. Recommended

Type RS Sunlamp (General Electric Co. and Westinghouse Electric Corp.) $12.75. Also available from Montgomery Ward (Cat. No. 86—1653) and Sears, Roebuck & Co. (Cat. No. 20—7091T) at $11.25. A small mercury arc tube mounted in a special glass R-40 bulb which incorporates, in addition, a filament ballast and a bi-metallic starting switch so that no auxiliary ballast equipment is required. Operates directly from the usual alternating current lighting circuits (110 to 125 volts, 50 to 60 cycles); input 275 watts. Built-in reflector makes unnecessary the purchase of additional reflector equipment. The RS lamp may be burned in any position. Meets the requirements of the American Medical Association, Council on Physical Medicine.

* * *

The following lamps are not considered deserving of full recommendation from the standpoint of economic considerations because a considerable extra cost to the consumer is involved in the purchase of a stand. The RS lamps have their own reflectors so any reflector becomes nothing more than a guard or decoration. Any goose-neck stand, bridge lamp, or similar adjustable mount with shade removed will serve the purpose of holding the lamp. Where such a lamp is available in the household, it is not necessary to purchase one of these special mounts to have effective use of the RS type of lamp. Pedestal-type lamp stands with reflectors for use with RS or heat (infra-red) lamps are available in stores for $14 to $16.

Mitchell Sunlamp (Mitchell Manufacturing Co., Chicago) $33.25 (at a New York City department store). A polished metal stand and reflector, with an RS sunlamp.

Sears' Cat. No. 20—7070. $14.95. Tubular base and socket for table use complete with RS lamp.

Sears' Cat. No. 20—07059. $21.50 complete with lamp. All-purpose holder (for table, clip on, or hanging) and socket for use with RS lamp.

Sears' Cat. No. 20—07055. $25.50 complete with lamp. Floor model, adjustable stand for use with RS lamp.

Select-o-ray. $39.50 (at a New York City department store). A double-ended housing containing an RS sunlamp in one end and a 250-watt infra-red heat lamp in the other.

S-1 and S-4 Type Lamps

Type S-1 Sunlamp (General Electric Co.; Westinghouse Electric Corp.; Montgomery Ward's Cat. No. 86—1650) $4.75 (lamp alone). A combination of tungsten electrodes in parallel with a tungsten filament, enclosed in a special glass bulb containing a small pool of mercury. Operates on alternating current through a special ballast transformer; input, 450 watts. Requires a suitable reflector mount. Meets the requirements of the American Medical Association, Council on Physical Medicine.

Type S-4 Sunlamp (General Electric Co. and Westinghouse Electric Corp.) $8.50 (lamp alone). Montgomery Ward's Cat. No. 86—1652, $7.22. A small mercury arc tube enclosed in a special glass bulb which is opaque to ultraviolet radiations of the shorter wavelengths. Operates from alternating current lines through a special ballast transformer; input about 120 watts. Requires

a suitable reflector mount. This lamp meets the requirements of the American Medical Association, Council on Physical Medicine.

General Automatic Ultra Violet Soleil Lamp, Model E-43 (General Automatic Corp., Macedonia, Ohio) An S-4 bulb mounted in an adjustable stand, with ballast transformer in the base.

Type RS-4 Sunlamp (General Electric Co.) $10 (lamp alone). Similar to the S-4 sunlamp, but mounted in an R-40 reflector type bulb. No additional reflector equipment required.

Special Types

Hanovia, Home Sun (Hanovia Chemical Mfg. Co., Newark, N.J.) $79.50. A mercury arc tube in a reflector on an adjustable stand, with transformer and control equipment in the base of the stand. Operates from a-c supply only; input, 150 watts.

Sperti Sunlamps, Portable and Model S-200 (Sperti, Inc., Cincinnati) $37.50 (Portable), $48.50 (*Model S-200*); Montgomery Ward's Cat. No. 86—1630R, apparently same as *Model S-200*, $48.50. A mercury arc tube with a resistor ballast for operation from a-c or d-c circuits (110 to 125 volts). Heat generated in the resistor ballast used in the form of "low temperature" infra-red radiation. *Model S-200* was rated at 500 watts; no wattage rating given for portable.

B. Intermediate

Hanovia (Ward's Cat. No. 86—1699R and 86—1698M) $84.50; $64.50. Quartz lamp considered likely to pass low or short wavelength radiation. Price seems unduly high, considering other lamps available. A-c only.

Montgomery Ward's, Cat. No. 86—1635R. $45. Make unknown. A-c only. Total output likely to be low and *if* with quartz tube likely to give excessive proportion of shorter wavelength radiation, a point that should have been expressed in the catalog listing. On available information not recommended for general use.

C. Not Recommended

Sun-Kraft (Sun-Kraft Inc., Chicago) $64.50. A quartz mercury tube of the electrode-less type, mounted in an adjustable table stand with the control equipment in the base. Operates from a-c or d-c supply; input, about 50 watts. Radiations (according to manufacturer) give peak intensity at 2537 angstrom units, which is outside the requirements of the American Medical Association, Council on Physical Medicine.

Vitan Sun Lamp (J. Kriser Corp., 30 E. 10th St., New York 3) $29.95. An elongated tube in the general form of a "W," mounted in the front of a box containing the control equipment. Input watts not indicated.

Helps for Car—Starting on Very Cold Mornings

In very cold weather, it is often worth a great deal to be able to operate the starter of one's car in the morning with assurance that the engine *will* start and get its owner on his way to work or to town. One of CR's consultants has found that use of a 1000-watt radiant heater, something like the heater shown in the illustration on page 7 of the January 1947 BULLETIN, laid on its back under the engine and operated for an hour, will warm up the oil sufficiently to give a big reduction of the load on the car battery, and make starting practically certain, rather than somewhat doubtful. Use of the heater in this way will be especially helpful with a car that is kept in an unheated garage, in extremely cold weather. Batteries are so hard to get now that anything that lengthens their life and assures a start is worth considering. However, it should be pointed out that there is at least some degree of fire hazard in connection with almost any practical accelerated method of warming up the engine, if, for example, there should be a gasoline leak or even a leak of antifreeze from the radiator system. (The latter could occur in cases where an alcohol antifreeze was used, in high concentration, for example, in order to give protection to a low temperature.)

Two other suggestions along the same line have been seen in magazines recently. One involved the placing of an electric hot plate under the crankcase and a few inches below it. (This was suggested for use on farm tractors.) The other was to use one of the new *reflector* type incandescent "heat" lamps (a lamp having a silvered reflector behind the filament), hanging it from something on the engine under the hood, so that it points at the radiator.

These lamps dissipate about 250 watts and are much used for supplying heat for drying hair, photographic negatives and prints, and similar purposes. They must, however, be handled carefully to avoid breakage (or shattering by contact with water or something wet) and should never be placed too close to anything combustible, since the concentration of heat from the reflector is considerable, as with the radiant heater already mentioned, and thus damage might be caused or a fire started under some circumstances.

A New Lint Remover

Rollaway Lint Remover is distributed by Apex Products Co., 1906 S. Arlington Ave., Los Angeles; $2.95 complete; replacement rolls $1. Though showing no resemblance to the conventional clothesbrush, the *Rollaway* Lint Remover does an excellent job of removing lint and other surface dirt from clothing, upholstery, and even smooth surfaces such as desks and counter tops. This lint remover is apparently meant primarily for use by tailors or cleaners who have the problem of completely eliminating lint from goods about to be delivered, especially when the garments are of certain grades and textures on which lint or dust may be very conspicuous. It consists of a simple wooden roller about 4 inches long around which is wound a considerable length of a 4-in. wide tacky paper tape, like masking tape. This is wound on in many layers with its sticky side out. The tape and its roller are mounted on a steel rod bent to suitable shape, with an attached wooden handle so that the device can be used to remove lint by simply rolling it over the dusty surface. Linty materials, of course, are picked up and adhere to the sticky surface of the tape. When the roller has become coated with lint, the surface can be cleaned and renewed by wiping off with a clean soft rag saturated with a little household cleaning solvent (of the non-flammable type, of course—and do not breathe the fumes, which are always poisonous). This process has its limitations, since the surface of the tape loses stickiness with this treatment, but when one layer has lost its usefulness, it can be peeled off, leaving a new layer of sticky surface beneath. The price of this cleaner ($2.95) is high, but does not seem exorbitant when compared with the relatively ineffective *Electro-Static* cleaner which was listed for $1.69, plus postage, in the 1946-47 Fall and Winter Montgomery Ward catalog and has been widely promoted in department-store advertising for many months. (Ordinary clothesbrushes at $1.25 to $2.25 would probably have a much longer life than the *Rollaway* and do remove some sub-surface as well as surface dirt from clothing but, of course, do not pick up and hold fine loose dirt and lint.)

The directions advise putting a short length of string under the edge of the tape to facilitate the peeling process. The string should be fairly strong but of small diameter.

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†indicates that listings of names or brands are included.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, The Christian Century, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety* (weekly), and *Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, or Magnacolor)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
2	2	10	**Abie's Irish Rose**	*com AYC*
—	—	5	**Accomplice**	*cri-mel A*
—	—	7	**Affairs of Geraldine**	*mus-com A*
—	2	3	**Alias Mr. Twilight**	*cri-mel A*
1	8	8	**Angel on My Shoulder**	*fan A*
—	2	3	**Appassionata**	*mus-dr A*
—	8	8	**Bachelor's Daughters, The**	*mus-com A*
—	4	5	**Bamboo Blonde, The**	*mus-war-rom A*
—	2	8	**Beast with Five Fingers, The**	*cri-mel A*
—	1	2	**Beauty and the Bandit**	*wes AYC*
—	3	1	**Bedelia**	*cri-dr A*
—	4	4	**Below the Deadline**	*mel A*
9	3	1	**Best Years of Our Lives, The**	*war-dr A*
—	1	5	**Betty Co-ed**	*mus-com A*
—	2	2	**Beware**	*mus-com A*
1	8	8	**Big Sleep, The**	*cri-mel A*
—	8	7	**Black Angel**	*mus-mel A*
—	7	5	**Black Beauty**	*dr YC*
—	1	5	**Blonde for a Day**	*mys A*
—	4	5	**Blondie Knows Best**	*com AYC*
—	1	3	**Blondie's Big Moment**	*com A*
1	14	4	**Blue Skies**	*mus-biog-c A*
—	—	5	**Boston Blackie and the Law**	*cri-mel AY*
—	3	3	**Bowery Bombshell**	*mel AYC*
—	1	2	**Bridge of Sighs**	*mel A*
4	13	—	**Brief Encounter**	*dr A*
—	3	3	**Bringing Up Father**	*com, AY*
—	1	5	**Brute Man, The**	*cri-mel A*
4	11	3	**Caesar and Cleopatra**	*dr-c A*
1	7	2	**California**	*wes-c A*
2	10	3	**Canyon Passage**	*wes-c A*
1	6	1	**Carmen**	*dr A*
—	5	7	**Chase, The**	*cri-mel A*
—	4	4	**Child of Divorce**	*dr A*
1	2	1	**Children of Paradise**	*dr A*
—	1	2	**Clandestine**	*war-dr A*
2	9	4	**Claudia and David**	*com AYC*
1	13	3	**Cloak and Dagger**	*war-mel A*
—	10	6	**Cockeyed Miracle, The**	*fan A*
—	3	—	**Conquest of Cheyenne**	*wes AYC*
—	2	2	**Cowboy Blues**	*mus-wes AYC*
—	2	7	**Crime Doctor's Manhunt**	*mys-mel A*
—	6	4	**Criminal Court**	*mus-cri-dr A*
—	4	11	**Cross My Heart**	*mus-cri-mel A*
—	2	7	**Cuban Pete**	*mus-com AYC*
—	4	5	**Danger Woman**	*mel A*
—	3	3	**Dangerous Millions**	*cri-mel AYC*
—	1	4	**Dangerous Money**	*mys-mel AYC*
—	3	6	**Dark Alibi**	*mys-mel AYC*
—	5	5	**Dark Horse, The**	*com AYC*
2	10	3	**Dark Mirror, The**	*mys-mel A*
—	11	4	**Dead of Night**	*mys-mel A*
—	4	4	**Dead Reckoning**	*mel A*
—	2	2	**Death Valley**	*mel-c AYC*
—	9	7	**Deception**	*dr A*
—	3	5	**Decoy**	*mel A*
—	5	2	**Desert Horseman, The**	*mus-wes AYC*
—	3	2	**Devil's Hand, The**	*fan A*
—	5	1	**Devil's Playground, The**	*wes AYC*
—	4	3	**Dick Tracy versus Cueball**	*mel A*
—	—	3	**Don Ricardo Returns**	*rom-dr A*
—	4	5	**Down Missouri Way**	*mus-com AYC*
—	3	1	**Driftin' River**	*mus-wes AYC*
3	2	1	**Duel in the Sun**	*wes-c A*
—	8	3	**Earl Carroll Sketchbook**	*mus-com A*
1	11	4	**Easy to Wed**	*mus-com-c A*
—	3	—	**Extenuating Circumstances**	*cri-com A*
—	4	1	**Fabulous Suzanne, The**	*com A*
—	2	6	**Falcon's Adventure, The**	*cri-mel AYC*
—	4	1	**Fool's Gold**	*wes AYC*
—	1	2	**Frenzy**	*mys-mel A*
—	7	2	**G.I. War Brides**	*dr A*
1	6	5	**Gallant Bess**	*war-dr-c AYC*
—	4	12	**Gallant Journey**	*dr A*
—	2	3	**Gas House Kids**	*mel AYC*
—	2	1	**Genius and the Nightingale, The**	*dr A*
—	—	7	**Genius at Work**	*mys-com A*
—	6	1	**Gentleman Joe Palooka**	*com A*
—	1	2	**Ginger**	*dr AYC*
—	2	2	**God's Country**	*mel-c AYC*
—	4	4	**Great Day**	*war-dr AYC*
—	2	1	**Gunman's Code**	*wes AYC*
—	1	4	**Heading West**	*wes AYC*
—	2	2	**Heldorado**	*mus-wes AYC*
—	2	3	**Hello Moscow**	*mus-com A*
—	7	2	**Her Adventurous Night**	*com A*
—	6	7	**Her Sister's Secret**	*war-dr A*
—	2	5	**High School Hero**	*mus-com AY*
4	10	3	**Holiday in Mexico**	*mus-com-c AYC*
—	7	—	**Home in Oklahoma**	*mus-wes AYC*
—	7	5	**Home Sweet Homicide**	*mys-mel A*
1	8	7	**Humoresque**	*mus-dr A*
—	3	1	**I Know Where I'm Going**	*dr A*
—	4	8	**If I'm Lucky**	*mus-com A*
—	2	1	**I'll Be Yours**	*mus-com A*
—	—	6	**Inner Circle, The**	*cri-mel A*
—	5	6	**Inside Job**	*cri-mel A*
—	—	6	**Invisible Informer**	*cri-mel A*
—	2	2	**It's a Joke, Son!**	*com A*
6	7	1	**It's a Wonderful Life**	*dr AY*

A	B	C		
—	2	7	**It's Great to be Young**	*mus-com AY*
2	5	6	**I've Always Loved You**	*mus-dr-c A*
2	5	—	**Jericho**	*war-dr A*
1	6	3	**Johnny Frenchman**	*war-dr A*
—	4	—	**Johnny O'Clock**	*mys-mel A*
4	9	1	**Jolson Story, The**	*mus-biog-c AY*
2	13	1	**Killers, The**	*cri-mel A*
—	2	6	**Ladies' Man**	*com A*
—	1	3	**Lady Chaser**	*mel AY*
1	8	1	**Lady in the Lake**	*cri-mel A*
—	4	—	**Lady Surrenders, A**	*rom A*
—	2	3	**Landrush**	*mus-wes AYC*
—	2	6	**Last Crooked Mile, The**	*cri-mel A*
—	2	2	**Lawless Breed**	*mus-wes AYC*
—	2	5	**Little Iodine**	*com A*
—	4	3	**Little Miss Big**	*dr AYC*
—	5	1	**Locket, The**	*mel A*
—	1	2	**Lone Star Moonlight**	*mus-wes A*
—	1	3	**Lone Wolf in Mexico, The**	*mys-mel A*
—	7	4	**Love Laughs at Andy Hardy**	*mus-com AY*
1	9	5	**Magnificent Doll, The**	*hist-dr A*
—	1	2	**Magnificent Rogue, The**	*com A*
—	—	5	**Man from Morocco, The**	*mel A*
—	5	4	**Man I Love, The**	*mus-mel A*
—	4	3	**Man's Hope**	*war-dr A*
3	11	2	**Margie**	*com-c AY*
—	7	1	**Mighty McGurk, The**	*dr AYC*
—	—	3	**Missing Lady, The**	*mys-mel A*
—	5	12	**Mr. Ace**	*dr A*
—	3	2	**Mr. District Attorney**	*cri-mel A*
—	4	1	**Mr. Hex**	*mel AYC*
—	5	1	**Murder in Reverse**	*cri-mel A*
—	4	2	**My Brother Talks to Horses**	*com AYC*
2	13	1	**My Darling Clementine**	*wes AYC*
2	4	1	**My Pal Trigger**	*mus-wes AYC*
—	13	3	**Navajo Trail, The**	*wes AYC*
—	6	7	**Never Say Goodbye**	*com A*
2	13	2	**Night and Day**	*mus-biog-c A*
—	1	4	**Night Train to Memphis**	*mus-mel A*
—	8	7	**No Leave, No Love**	*mus-com AY*
—	5	8	**Nobody Lives Forever**	*cri-mel A*
1	4	11	**Nocturne**	*mus-mel AY*
9	10	—	**Notorious**	*mys-mel A*
2	11	4	**Notorious Gentleman**	*war-dr A*
—	5	9	**Of Human Bondage**	*dr A*
—	3	4	**One Exciting Week**	*mus-com A*
—	2	2	**Out California Way**	*mus-wes-c AYC*
—	—	3	**Outlaw of the Plains**	*wes AYC*
—	1	4	**Overland Riders**	*wes AYC*
1	7	2	**Overlanders, The**	*dr AYC*
—	3	2	**Paris Frills**	*dr A*
—	3	5	**Passkey to Danger**	*cri-mel A*
—	4	7	**Perfect Marriage, The**	*com A*
—	3	5	**Personality Kid**	*com AYC*
—	—	5	**Phantom Thief, The**	*cri-mel A*
—	2	1	**Pilgrim Lady, The**	*com A*
—	7	3	**Plainsman and the Lady, The**	*wes AY*
—	3	4	**Postmaster's Daughter, The**	*nov A*
—	—	5	**Prairie Badmen**	*mus-wes AYC*
—	1	2	**Prairie Rustlers**	*wes AYC*
—	4	5	**Queen of Burlesque**	*mus-mel A*
1	1	2	**Queen for a Night**	*mus-rom A*
2	4	—	**Raider, The**	*war-doc AY*
1	9	4	**Razor's Edge, The**	*dr A*
—	9	2	**Rendezvous with Annie**	*war-com A*
—	2	4	**Resistance**	*war-mel A*
—	5	5	**Return of Monte Cristo**	*mel A*
—	4	3	**Return of Rusty**	*mel AYC*
—	6	1	**Roll On Texas Moon**	*mus-wes AYC*
—	2	1	**Rolling Home**	*dr AYC*
—	4	1	**Rustler's Roundup**	*wes AYC*
—	2	4	**San Quentin**	*mel A*
—	5	11	**Scandal in Paris, A**	*cri-mel A*
1	7	5	**Secret Heart, The**	*mus-mel AY*
—	—	6	**Secret of the Whistler**	*mys A*
—	1	4	**Secrets of a Sorority Girl**	*cri-dr A*
—	5	4	**Shadow of a Woman**	*cri-mys A*
—	2	5	**Shadowed**	*mys-mel A*
—	—	3	**Shadows on the Range**	*wes AYC*
—	1	4	**Shadows over Chinatown**	*mys-mel AYC*
—	4	1	**Shocking Miss Pilgrim, The**	*mus-com-c AY*
—	9	2	**Show-Off, The**	*com AYC*
—	1	2	**Silver Range**	*wes AYC*
—	7	2	**Sinbad the Sailor**	*adv-c AYC*
—	—	7	**Sing While You Dance**	*mus-com AYC*
—	—	5	**Singin' in the Corn**	*mus-com AYC*
—	2	2	**Singing on the Trail**	*mus-wes AYC*
1	4	—	**Sioux City Sue**	*mus-wes AYC*
—	4	3	**Sirocco**	*dr A*
4	7	3	**Sister Kenny**	*biog AYC*
—	2	6	**Slightly Scandalous**	*mus-com AY*
—	5	5	**So Dark the Night**	*mel A*
—	—	3	**Song of the Sierras**	*mus-wes AYC*
1	10	3	**Song of the South**	*car-c AYC*
—	1	3	**South of Monterey**	*mus-wes AYC*
—	1	5	**Spook Busters**	*com AY*
—	1	3	**Stage Coach to Denver**	*wes AYC*
2	8	—	**Stairway to Heaven**	*fan-c A*
—	1	3	**Stars Over Texas**	*mus-wes AYC*
—	3	6	**Step by Step**	*war-mel A*
—	11	5	**Stolen Life, A**	*dr A*
—	3	2	**Stone Flower**	*fan-c AYC*
—	4	—	**Story of the Pope, The**	*doc AYC*
—	—	5	**Strange Holiday**	*mel A*
—	—	6	**Strange Journey**	*mel A*
1	4	4	**Strange Woman, The**	*dr A*
—	4	6	**Sunset Pass**	*wes AYC*
—	2	3	**Susie Steps Out**	*mus-com A*
—	3	2	**Sweetheart of Sigma Chi**	*mus-com A*
—	4	4	**Swell Guy**	*dr A*
—	2	3	**Taras Family, The**	*war-dr A*
—	4	12	**Temptation**	*cri-mel A*
—	3	7	**That Brennan Girl**	*mel A*
—	2	2	**That Texas Jamboree**	*mus-mel AYC*
—	10	9	**They Were Sisters**	*dr A*
—	—	—	**Thieves' Holiday** (See Scandal in Paris, A)	
—	10	2	**13 Rue Madeleine**	*war-mel AYC*
—	14	1	**Three Little Girls in Blue**	*mus-com-c AY*
—	8	7	**Thrill of Brazil, The**	*mus-com A*
4	8	2	**Till the Clouds Roll By**	*mus-biog-c AY*
—	7	6	**Time, the Place, and the Girl, The**	*mus-com-c A*
1	8	1	**Time of Their Lives, The**	*com AYC*
—	1	6	**Traffic in Crime**	*mel A*
—	—	5	**Trap, The**	*mys-mel A*
—	—	4	**Tumbleweed Trail**	*mus-wes AYC*
—	4	2	**Turning Point, The**	*war-dr A*
—	9	3	**Two Guys from Milwaukee**	*com AYC*
1	10	4	**Two Years Before the Mast**	*adv AYC*
—	3	2	**Two-Fisted Stranger**	*wes AYC*
—	4	1	**Under Nevada Skies**	*mus-wes AYC*
2	7	6	**Undercurrent**	*mel A*
—	2	2	**Unexpected Guest**	*wes AY*
—	2	7	**Unknown, The**	*mys A*
—	3	6	**Vacation in Reno**	*com A*
—	1	10	**Valley of the Zombies**	*cri-mel A*
—	9	4	**Verdict, The**	*cri-mel A*
—	—	9	**Wake Up and Dream**	*mus-fan-c AYC*
—	7	7	**Wanted for Murder**	*cri-mel A*
3	5	1	**Welldigger's Daughter, The**	*dr A*
—	—	5	**West of the Alamo**	*mus-wes AYC*
—	6	6	**White Tie and Tails**	*com A*
—	6	9	**Wicked Lady, The**	*dr A*
—	—	7	**Wife Wanted**	*cri-mel A*
—	3	7	**Wild Beauty**	*dr AYC*
—	2	1	**Wild West**	*mus-wes-c AYC*
7	6	—	**Yearling, The**	*dr-c AYC*
—	5	1	**Years Between, The**	*nov A*
—	—	3	**Youth Aflame**	*dr A*

The Consumers' Observation Post

(Continued from page 4)

ing the reconversion period is believed to be largely responsible for this general air of why-bother-doing-things-right that now pervades much of the big-scale manufacturing industries.

* * *

CAUTIONARY NOTE: In our January Observation Post item on page 4, we failed to mention that when running the motor to keep the storage battery from going dead, when little used, it is important that the main garage door should be opened wide to avoid danger of carbon monoxide poisoning. An automobile engine should never under any circumstances be run in a closed garage or any garage with only its small door opened, for even a few moments of running an automobile can produce a highly dangerous (even lethal) concentration of carbon monoxide gas in any enclosed space.

* * *

NEW PRODUCTS: The Whirlbeater, a little portable electric beater for kitchen use made by the A. C. Gilbert Company, has been selling for $13.95. It is just a beater blade attached to a small ac-dc motor; the unit is supported in use by a handle. The unit is so light that it can be carried practically as easily as a hand-beater and is claimed to do "95% of everything a bulky mixer does." Tests were started on one sample but could not be completed because the electrical system of the beater failed in the standard proof-voltage test, at 600 volts. A replacement sample was obtained and tests were started again, but this also failed the proof-voltage test. Two such failures might seem to indicate that this was not a well-made and fully inspected appliance and hence would be of doubtful suitability for general kitchen use. As both samples failed before a general use test could be made, the accuracy of the advertising statement as to effectiveness quoted above, is still in doubt, but it seems certain that the manufacturer should do a better job of electrical inspection and testing of his product before delivery to dealers and consumers.

Baby's Own Soap, a soap specially sold for infants' use and priced at two 3.4-oz. cakes for 25 cents, has recently been analyzed and found to contain 91-1/2% soda soap, about 7-1/2% of moisture and perfume, and about 1/10% of sodium silicate, an alkaline sodium compound. There was a significant content of free fatty acid amounting to 0.4%, which would be considered too high. The

What they wrote:

Housewife, Oregon: "In times of inflation such as these, we more than ever feel the need for information on which to base our choices, not only of the necessities of life but also of those durable goods for which we have waited so long."

Radio Repairman, Washington: ". . .we have been very satisfied with your information and figure that we have saved a great deal of money thereby. The knowledge is worth many times what is paid for it."

Please tell your friends that a subscription to Consumers' Research Bulletin can help save money on their purchases!

THE DAY of the buyer's market when the prospective purchaser can walk into any store and find a wide selection of moderately-priced washing machines, refrigerators, vacuum cleaners, electric stoves, and mechanical dishwashers is not yet here, but don't let that keep you from starting to be a canny buyer right now. A subscription to Consumers' Research Bulletin will bring you the know-how.

EACH MONTH Consumers' Research Bulletin brings to its subscribers reports on many different brands of household appliances, soap and cleaning supplies, radio sets and phonographs that are available. Timely topics of special interest to consumers appear each month in the Consumers' Observation Post. Won't you pass along to a friend the convenient order blank on the next page?

Navy specification for olive-oil soda soap, for example, (castile) limits free fatty acid content to 0.1% and the U. S. Pharmacopoeia sets a limit of 0.23%. Milled toilet soaps and floating toilet soaps which have been examined contain, with possibly very few exceptions, less than 0.1% of free acid calculated as oleic acid. There was present also a small amount of lanolin. The content of free fatty acid was considered too much for a soap recommended for use on a baby's skin; indeed, would be high for a toilet soap for ordinary or adult use. Otherwise the soap would be considered to be of excellent quality, as it was free from chloride and had very little if any coconut oil (an oil which is relatively undesirable in a toilet soap since it causes skin irritation in susceptible persons). The presence of perfume, however, is considered somewhat undesirable in a soap meant for use with infants, as there is the possibility that the baby's skin might be affected in some cases.

Form-A-Gasket No. 1 and Form-A-Gasket No. 2 (Permatex Co., Inc., Sheepshead Bay, N. Y.) were analyzed some years ago. No. 1 was found to consist of asbestine, 53.5%; pontianak gum, 20%; bodied castor oil, 7%; denatured alcohol, 19.5%; with a trace of carbon black. No. 2 contained asbestine, 56.3%; alcohol, 10%; blown or treated castor oil, 32.7%; carbon black, about 1%. A more recent analysis indicates that these products have been changed somewhat by reduction of the content of inorganic material, but that they are of the same type as formerly. The Form-A-Gaskets are cements, intended to produce joints that are leakproof to gasoline vapor, gasoline, oil, grease, and water. No. 1 "dries fast and sets hard"; No. 2 "dries slowly and does not harden." Both products seemed to live up to their claims, so far as a short-time test could indicate, except that No. 2 softened noticeably in both gasoline vapor and liquid gasoline, hence it would seem could not be relied on to assure a gasoline-tight joint under pressure.

Miner's Cleanser (Clean Rite Cleansing Products, Inc., Freeport, L. I., N.Y.; formerly Miner's Waterless Cleansing Products Co.) is a white paste "for painted walls and woodwork, linoleum, rugs, carpets, upholstery, porcelain and enamel, tile, glass, wallpaper." It sells at $1.50 for a pound glass jar, and is asserted to be a "scientific compound of solvents, absolutely pure and free from acids or grit...." Analysis of this product showed it to be a solution in water (94%) of sodium soap (4%), soda ash, or commercial sodium carbonate, (2%). The price is indeed a high one for the ingredients provided, and the claim "a scientific compound of solvents" will seem to the average consumer to be rather stretching things as a description for a weak solution made essentially of soap and washing soda.

Consumers' Research, Inc.
Washington, N. J.

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☐ **New** ☐ **Renewal**

PHONOGRAPH RECORDS

By Walter F. Grueninger

Please Note: Prices quoted do not include taxes. In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

ORCHESTRA

Miaskovsky: *Symphony No. 21.* USSR National Symphony under Rachlin. 6 sides, Compass Set 103 (Compass Record Co., 1270 Ave. of the Americas, New York 20). Recorded and pressed in the USSR. $3.75. Interesting work. As the playing time runs under 17 minutes, recording on two 12 inch discs instead of three 10 inch discs would have been preferable. Good fidelity. **Interpretation AA**
Fidelity of Recording A

Mozart: *Symphony No. 41* ("Jupiter"). (7 sides) & **Bach:** *Suite No. 3—Air* only (1 side). NBC Symphony Orchestra under Toscanini. Victor Set 1080. $4.85. One of Mozart's greatest symphonies, which demands *drive*—and gets it. Little to choose between this set and Bruno Walter's Columbia Set 565. Beecham's Columbia Set 194 offers a unique interpretation but oldish recording. Overall, by a slight margin, I prefer Toscanini. **Interpretation AA**
Fidelity of Recording AA

Prokofieff: *Romeo and Juliet Suite No. 2.* Moscow State Philharmonic Orchestra under the composer. 12 sides, Compass Set 101. $7.50. Music decidedly uneven in value. Authoritative performance thinly recorded on 10 inch discs, though bass is good. **Interpretation AA**
Fidelity of Recording B

CHAMBER AND INSTRUMENTAL

Etudes. Jakob Gimpel (piano). 8 sides, Vox Set 164. $4.75. (Vox Records, 236 W. 55 Street, New York 19, N.Y.) Glittering performance of difficult short compositions by Chopin, Mendelssohn, Scriabin, Toch, Debussy, etc., heard in concert halls occasionally. Some surface noise on several sides but actually not enough to matter. **Interpretation AA**
Fidelity of Recording A

French Piano Music. Gaby Casadesus (piano). 8 sides, Vox Set 163. $4.75. Short, generally unfamiliar compositions by Couperin, Rameau, Chabrier, Faure, Satie, Ravel. Suave performance. Surfaces a little more gritty than Victor's. **Interpretation AA**
Fidelity of Recording A

Grieg: *Sonata.* Garbousova (cello), Balsam (piano). 6 sides, Concert Hall Society Set A-D. $6.85. The work, seldom played has its moments and it is convenient to have it available now on records. Commendable performance by the world's foremost woman cellist and an able associate. Splendid recording on plastic. Sets are generally available in this unlimited edition. **Interpretation AA**
Fidelity of Recording AA

Prokofieff: *Music for Children.* Ray Lev (piano). 6 sides, Concert Hall Set A-C. $4.50. Very thin fare musically. And definitely not for children. Pressed on plastic, nearly noiseless. Recorded on considerably less than three full 10 inch discs. Well played and recorded. **Interpretation AA**
Fidelity of Recording AA

VOCAL

American Songs. Helen Traubel (soprano). 8 sides, Columbia Set 639. $4.85. "Home Sweet Home," "A Perfect Day," "All the Things You Are," and other nostalgia. Traubel is out of her element in the new music and too formal in the intimate, old songs. Words are not always intelligible, the orchestra waxes fancy too often and the male chorus is superfluous. Recording of sibilants not satisfactory, but balance with orchestra is quite good. **Interpretation B**
Fidelity of Recording A

Beethoven: *Six Irish Songs.* Richard Dyer-Bennet (tenor). 6 sides, Concert Hall Set A-G. $4.50. Old songs collected and arranged by Beethoven as an art form, which I find dull. Moreover the performance of the soloist is less satisfying than most of his work. Plastic. **Interpretation B**
Fidelity of Recording B

Hymns We Love. Nelson Eddy (baritone). 10 sides, Columbia Set 646. $4.50. A trick album with Eddy singing four parts simultaneously. Dubbed recording poor, performance frequently off beat, with no subtlety. **Interpretation B**
Fidelity of Recording C

Irish Songs. Eileen Farrell (soprano). 8 sides, Columbia Set 662. $3.75. "The Minstrel Boy," "Last Rose of Summer," "Kerry Dance," "Rose of Tralee," etc. This is not Miss Farrell's record debut, as Columbia states, for I find in my collection her recording on Decca 23366 of "Kiss in the Dark" and "Always." In Carnegie Hall she sounded better than on records. Part of the fault lies, I believe, with the engineers who have not "captured" her big voice. **Interpretation B**
Fidelity of Recording B

Mozart: *Operatic Arias.* Ezio Pinza (bass). 8 sides, Columbia Set 643. $4.85. Outstanding music sung (in Italian) in fine style but here Pinza commands only a part of his once golden voice. **Interpretation A**
Fidelity of Recording AA

Rimsky-Korsakov: *"Song of Scheherazade."* Kullman (tenor). 4 sides, Columbia Set X272. $2.15. Hodgepodge of R-K melodies from the motion picture. Kullman's tremolo gets worse, the orchestra is too far from the mike.
Interpretation C
Fidelity of Recording B

Songs of Erin. Kate Smith (soprano). 8 sides, Columbia Set C116. $2.75. "Molly Malone," "Mother Machree," "Macushla," "My Wild Irish Rose," etc. There's too little musicianship here (she "never had a music lesson" states the blurb) but her excellent diction, well focused tones which are easy to record and simplicity of style are delightful in this music. **Interpretation A**
Fidelity of Recording AA

LIGHT

Jazz Trio. Simeon (clarinet) Johnson (piano) Foster (bass). 4 sides. Disc Set 708. $2.75. "Lorenzo's Blues," "Harlem Hotcha," "Bandanna Days," "Creole Lullaby" played by experts. Good recording except that the bass is barely audible and surface noise is too audible. **Interpretation AA**
Fidelity of Recording A

The Whale Who Wanted to Sing at the Met. Nelson Eddy (baritone). 6 sides. Columbia Set 640. $3. The amusing episode of the whale from the Disney film, "Make Mine Music." Probably dubbed, in part at least, from the sound film. In no other way can I account for the poor fidelity.
Interpretation AA
Fidelity of Recording C

Victor Herbert Sung by Lois Butler (soprano). 8 sides, Capitol Set DB30. $3.75. Charming and unsophisticated is the singing of 14 year old Lois Butler, but she has far to go before reaching the artistry, say, of Dorothy Kirsten. Interesting orchestral background. Well recorded. Included are "Kiss in the Dark," "Thine Alone," "Sweethearts," "Italian Street Song," etc. **Interpretation B**
Fidelity of Recording AA

Do you know that—

Meat Three Times A Day

by

F. J. Schlink and M. C. Phillips

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Even working-class boarding houses of the 1860's had meat at every meal, with ham, beefsteak, mutton or pork chops for breakfast.

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—N. Y. Sun

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